



IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

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NEW YORK
BOTANICAL
GARDEN

VOL. XIV.

JANUARY TO DECEMBER, 1919

ILLUSTRATED

DUBLIN

PUBLISHED BY IRISH GARDENING, LIMITED

AT 53 UPPER SACKVILLE STREET

1919

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INDEX TO VOL. XIV.

NOTE.—The various plants mentioned in the "Month's Work" and other general articles are not indexed. Illustrated subjects are printed in italics.

- Abstracts, 172.
Anemones, 104.
Anemone vernalis, 182.
 A horticultural journey, 122.
 A late autumn nook in the garden, 177.
 Allotments, 12, 30, 46, 62, 78, 94, 110, 124, 142, 158, 174, 186.
Alnus incanus ramulis coccineis, 23.
 Amateur fern growing, 7, 25, 41, 59, 75.
 A mild season, 11.
Anemone apennina, 77.
 Annuals for autumn sowing, 157.
 Apples at the Albert Agricultural College, 154.
 Apples, cottagers; grow your own, 167.
Arbutus menziensis, 119.
 At Powerscourt, 99.
 Beet, non-bleeding, 158.
Berries, 65.
 Border carnations, 43.
 Broccoli, 93.
Bulb-planting, 137.
 Buttercups for the rockery, 81.
 By Sed-el-Bahr, 16.
Campanulas, annual and biennial, 82.
Celmisias, 178.
Cinerarias, 50.
Clematis in September, 148.
Colchicum crociflorum, 55.
 Competitions for allotment holders, 71.
 Correspondence, 14, 24, 144.
Cotoneaster Franchetii, 6.
Crataegus tanacetifolia, 87.
Crinum and Nerine, 152.
Cyclamens, 68.
 Delphiniums, some wild, 157.
 Dianthus, 102.
Dodecatheons, 89.
 Early flowering rhododendrons, 58.
 Early peas, 22.
Embothrium coccineum, 176.
Euonymus alatus, 146.
 Floral fête at Chelsea, 85.
 Flowering shrubs, selection of, 163.
 Flowers and plants in Christmas week, 4.
 Foliage plants, 129.
 Forestry—Trees for shelter and ornament, 185.
Fritillaria askabadensis, 55.
 Fruit prospects, 68.
 Gardening after the war, 1.
 Gathering and storing fruit, 71.
Gladiolus primulinus, 142.
 Guaranteed gardening, 139.
Hamamelis virginiana, 154.
 Hardy calceolarias, 99.
Hardy herbaceous plants, 17.
 Hardy plant notes, 69.
 Haricot beans, 139.
Hedges, ornamental, 4.
 Hellebores, 19.
Helleborus orientalis, 58.
Herbaceous plants, 168.
 Herbaceous plants for shade, 18.
 Horticultural reconstruction, 113.
 Housing, health and horticulture, 87.
Indoor plants at Glasnevin, 2.
 In the North, 100, 150.
 Indigenous plants worth growing, 121.
 Insect pests of fruit, 90.
 Iris *sind-pers*, 156.
 Irish reconstruction problems, 72.
 Journal of the Kew Guild, 72.
 July flowering primulas, 119.
 Late flowering shrubs, 152.
Laratera Olbia and some others, 53.
Lilium testaceum, 138.
 Liquid manure, 182.
Lithospermum rosmarinifolium, 23.
 London Pride, 102.
Magnolias, 86.
 Manuring of fruit trees and bushes, 53, 73.
Moltkia petraea, 23.
 Mount Usher, 145.
 Myosotis White Pearl, 93.
 Native ferns, notes on, 162.
 New year's notes and notions, 13.
 Notes and abstracts, 72.
 Notes from my rock garden, 103, 120, 138, 117, 181.
Notes from Rostrevor, 114.
 Notes on the propagation of alpine, 31.
Nothofagus obliqua, 105.
Nuphar polysepalum, 120.
 Obituary (Mr. T. Smith, V.M.H.), 128.
 Ornamental hedges, 4.
Osmanthus Delavayi, 86.
Paeonia Emodi, 147.
 Paul's scarlet climber (hybrid *wichuraiana*), 183.
 Pine weevil, 51.
Pinks for the rock garden, 179.
Pinus parviflora, 12.
 Plants for dry, shady places, 38, 51.
 Plants in rooms, 175.
Polygonum vacciniifolium, 176.
 Pope on landscape gardening, 155.
 Popular flowers, 123.
 Potatoes, 44.
 Potato spraying, 70.
Primula chasmophila, 55.
Primula decorum, 102.
Primulas for the garden, 55, 76.
Proustia pyrifolia, 152.
 Pruning roses, 35.

Prunus pissardii, 23.
Prunus sargentii, 87.
 Pulping fruit for jam, 6.
Pyracantha crenulata yunnanensis, 6.

Queries, 109.

Raintall in 1918, 32.
 Regelia-cyclus trises, 139.
 Replies to correspondents, 39.
 Reviews, 45, 140.
Rhododendron angustini, 86.
Rhododendron calicalyx, 18.
Rhododendron flavidum, 86.
Rhododendron Loderi *Pretty Polly*, 102.
Rhododendron sphaeranthum, 37.
Rhododendron talense, 68.
Rhododendrons at Daumbura, 124.
Rhododendrons at Rowallane, 89, 97.
 Royal Horticultural Society of Ireland, 126.
 Royal Horticultural and Arboricultural Society of Ireland, 188.
 Runner Beans, 49.

Sarcococca ruscifolia, 58.
Scilla sibirica multiflora, 55.
 Shows and competitions, 153.
Shrubs of July, 116.
 Silver Leaf, the menace of, 11.
Silvery Savitragas, 183.
 Summer pruning, deciduous trees, 109.
 Sweet peas after the war, 40.

The alpine garden in June, 136.
 The apple crop, 169.
 The garden in November, 20.
 The grape vine, 52.
 The growwells, 23, 54.
 The fruit industry, 54.
The flowering of fruit trees, 105.
 The future of fruit growing, 29.
 The loganberry, 24.
 The month's work, 15, 31, 47, 63, 79, 95, 111, 143, 159, 175, 187.
 The nursery, 88.
 The Oso berry, 23.
 The propagation of alpine, 67.
 The rock garden, 54.
 The rose garden, 70, 93, 105, 155, 171.
 The silver cedar, 16.
 The willow industry, 38.
 Trees and shrubs, 68.
Tricuspidatum dependens, 150.

University appointment, 188.

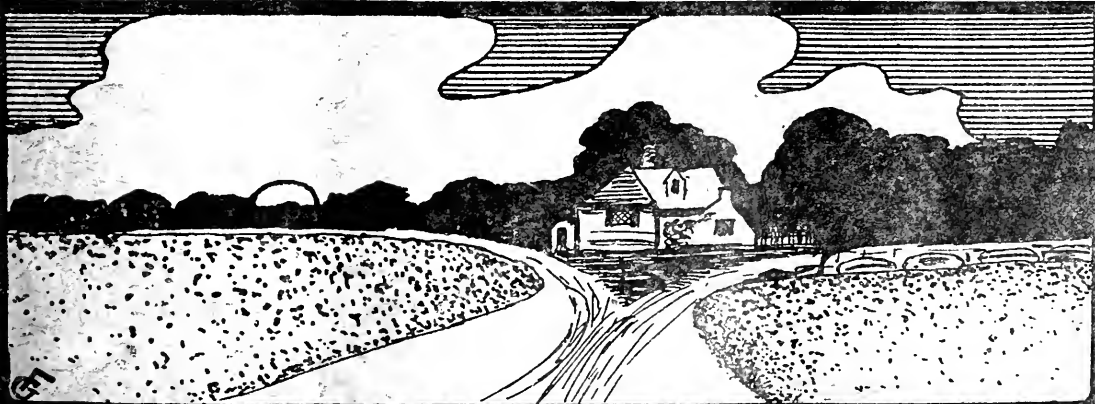
Vegetable notes, 22.
Veronica macrocarpa, 36.
Viburnum carlesii, 86.
Viburnums, 106.

Water lilies, 69.
 Wedding Bells, 11.
 Woolly aphid, 174.

Irish Gardening

Contents

	PAGE		PAGE
Gardening after the War	1	Allotments	12
Indoor Plants at Glasnevin (Illustrated)	2	<i>Pinus Parviflora</i>	12
Flowers and Plants in Christmas Week	4	New Year's Notes and Notions	13
Ornamental Hedges (Illustrated)	4	Wedding Bells	14
<i>Cotoneaster Franchetii</i>	6	Correspondence	14
<i>Pyracantha crenulata var. yunnanense</i>	6	The Month's Work—	
Pulping Fruit for Jam	6	Southern and Western Counties	15
Amateur Fern Growing	7	Midland and Northern Counties	16
A Mild Season	11	The Silver Cedar	16
The Menace of Silver Leaf	11	By Sed-el Bahr	16



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IRISH GARDENING

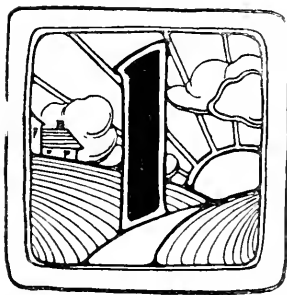
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JANUARY
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EDITOR J. W. BESANT.

Gardening after the War.



At the course of the war there were many dismal forebodings that "gardening would never be the same again."

It may not, but the possibilities are that it will be better and more popular than ever.

It is "the purest of human pleasures,"

and many who, before the war, only looked on, have found pleasure and profit in tilling a plot.

That the utilitarian side will be maintained there can be little doubt, for the need for producing more of our own fruit and vegetables has been poignantly impressed on us during the war, and all are agreed that the homeland, under proper management, can produce an enormous quantity of food.

The allotment movement requires to be extended and consolidated. Fixity of tenure is much wanted and proper powers of legislation must be acquired, so that wherever there is a demand for plots land can be made available with as little loss and inconvenience as possible to proprietors and builders. The demand for houses is likely to be even greater than the demand for plots, and it is unreasonable to expect that a field conveniently situated for building should be given over to allotments. At the same time, the opportunity should be seized of providing each house with a decent garden; there is no place like the rear of a man's house for his plot. Thus the allotment movement and the housing problem may be combined in the most satisfactory way.

The fruit industry is one that must be fostered and encouraged to the utmost extent. Early in the war fruit was looked upon as a luxury, and its production met with little favour from those

in authority; but long before the cessation of hostilities this view had been abandoned, and every effort was being made to increase the production of home-grown fruit. In Ireland a great deal has been done to promote and encourage fruit growing, and a considerable measure of success has attended these efforts. Much can yet be done by individual effort, and we have alluded to the enterprise displayed in this direction in former issues of this journal. The climate of Ireland is well adapted to the growing of all the most important fruits of temperate climates, and with proper cultural methods first class Apples, Strawberries, Currants, Gooseberries, Raspberries, &c., can be produced, the surplus not required at home finding a ready market in Britain.

We may take it, then, that if horticulture is to take its proper place every gardener must determine to produce the utmost his opportunities allow; and we have little fear on this score. In the past the gardener could beat the farmer hollow at production, his methods of cultivation and cropping being far in advance of those of the agriculturist; but there is to be a tremendous revival in farming, and we gardeners, whether in private gardens or in market gardens, must see to it that equal importance is attached to horticultural products.

What of the ornamental side of gardening? some will ask. Beyond doubt, this will speedily be restored and in a very short time we shall see our gardens more glorious than ever with flowers, beautiful shrubs, and ornamental trees. Perhaps tender bedding plants will not return just yet, but the herbaceous border will be more important than ever, the rock garden will come back at once to its place in the affections of the many, water gardening, bog gardening, beautiful grouping of shrubs and trees will go on with as much enthusiasm as ever, and need not interfere at all with food production, for the ornamental side can very often be developed on ground that would not pay to prepare for

food crops; and whether this be so or not there is abundant room for both. It should not be necessary much longer for our Botanic Gardens and public parks to devote their flower beds to vegetables. These public institutions have done their work. They have demonstrated to the public the possibilities in the way of food production, and by example have stimulated many to grow their own vegetables. While it may be necessary for some time still to encourage food production, the proper function of a public park is to provide space for recreation and beautiful flowers for the enjoyment and education of those who have neither time

nor facilities to grow such themselves. It is possible that State Botanic Gardens may fill a larger place in the national life than heretofore. Botany is an important science underlying the principles of horticulture and agriculture, and its study is likely to be extended; also, there will be much experimental work to be undertaken by the governing State departments concerned, and it is natural they should look to existing institutions to take up much of the work that must be done.

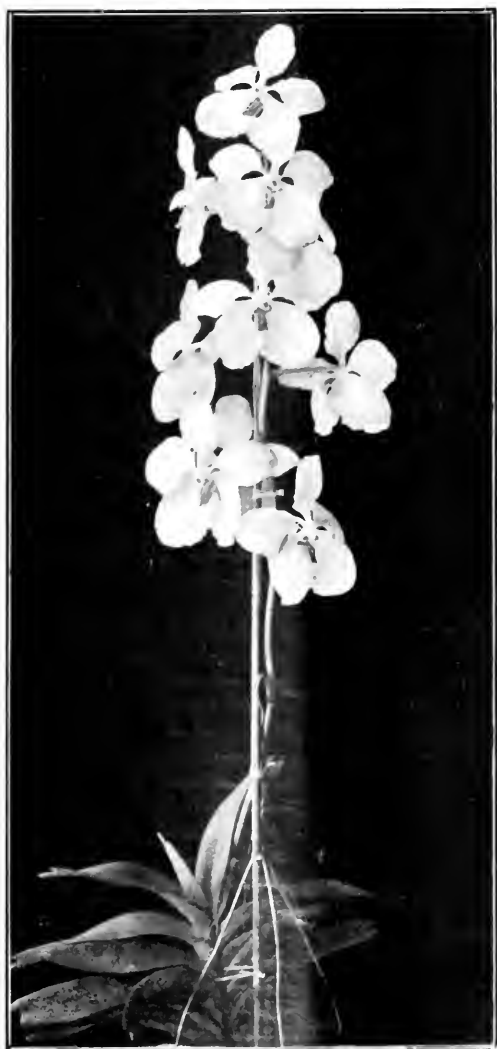
In future there is no doubt the Government will concern itself much more intimately with horticulture, and in the three countries, England, Scotland, and Ireland, the centre of its horticultural activities might well be the State Botanic Garden. In Ireland we are well to the front in this respect, and have both a well-equipped Botanic Garden and, not far off, an up-to-date orchard and vegetable garden, both under Government control.

There is a vast amount of research work waiting to be done, and much information is wanted on manures, spraying, and spray fluids, the fertility and sterility of fruit trees and other work of this kind in which America is far before us. Let us look forward, then, to a great development in horticulture, the most ancient of all crafts.

Indoor Plants at Glasnevin.

"HE who loves a garden loves a greenhouse too," and it is certainly a pleasure, on a wet and windy winter's day, to enter the calm of a greenhouse and enjoy the sweet scents and beautiful colours of the plants growing there. During the war many people have had to forego the pleasures of the greenhouse, and have even had to get rid of the usual occupants in favour of food plants. Let us hope the time is not far distant when this necessity will no longer obtain, and all who wish may again enjoy the pleasure of the greenhouse, especially in winter.

At the Botanic Gardens, Glasnevin, happily, it has been found possible to maintain nearly all the usual features despite the oft times low temperature due to the coal shortage. In this respect it may be we have learnt lessons regarding the requirements of plants as well as of people. Doctors declare that many people are healthier now than before the war owing to the enforced restriction in rations, solid and liquid, and, likewise, gardeners, whose calling has many features in common with the medical profession, have found that many plants flourish in a temperature much lower than was hitherto thought necessary. It would be interesting to have the experiences of gardeners who have



VANDA COERULEA
(The only really Blue Orchid)



COELOGYNE CRISTATA

(An easily grown Orchid flowering in Early Spring)

grown indoor fruits during the last few years with little or no artificial heat.

However, no fault could be found with the display in the ever popular Camellia House at Glasnevin. The popular scarlet "Geranium" in the best varieties is doubly welcome in the dark days of the declining year, and a fine strain of blue Cinerarias (Senecio) made a striking show. A pretty group was made up of paper white Narcissus edged with pots of Roman Hyacinths, the latter having been missed for some time. A bank of Cyclamens, pure white, salmon pink, and dark red, was conspicuous, proving the value of this plant for winter flowering. Next to this a large group of the old *Cypripedium insigne* was noticeable, an interesting cool house Orchid, which anyone might grow and enjoy. A group of large-flowered *Primula obconica* flanked the *Cypripediums* on the other side and showed the great improvement that has taken place in this plant during late years; the colours now vary from white through pink to what one may call red for want of a more accurate term.

Camellias, from which this house takes its popular name, are planted out in the centre

bed, and some of them are big bushes bearing double white and double pink blossoms.

In the orchid house quite a fine display was on. The following is a list of the more conspicuous plants noted:—*Laelia anceps* in several varieties, some of the baskets carrying a large number of spikes; *Epidendrum vitellinum*, *Odontonia Langwayii*, *Vanda amesiana*, *Vanda coerulea*, *Stenoglottis fimbriata*, *Cattleya H. S. Leon*, *Odontoglossum Ardentillus*, *Cattleya O'Brieniana alba*, *Miltonia St. Andre*, *Odontoglossum crispum rosy var.*, *Cattleya Maggie Raphael alba*, *Odontioda Chelseaensis*, *Brassocattleya Queen Alexandra*, *Laelia-cattleya Britannia white var.*, *Oncidium ornithorhynchum*, *Cypripediums*, or *Paphiopedilums*, as they should be called, in great variety, including *Prince Olaf, virginale, magnificum, insignis Cobbiamum, aurora magnificum Sanderac*, *Golden Gem, Sir Redvers Buller, Boadicea Rosita*, and *Prospero gigantea*. The varieties of *Cypripedium leeanum*, itself a hybrid, are most attractive, the white dorsal sepal, more or less spotted, being a striking feature. A group of *Calanthes* behind the *Cypripediums* added a nice bit of colour.

WANDERER.

Flowers and Plants in Christmas Week.

THE forward condition of vegetation generally has been commented on by many people lately, and there is no doubt that a spell of cold weather would be beneficial. One cannot help admiring the various plants which are coming into flower or are making growth preparatory to flowering, but the fact remains that we know full well they are before their time, and will doubtless suffer. *Sisyrinchium grandiflorum*, the always charming Satin Flower, is already six inches high, and will soon come into flower unless checked by frost; and our clump is in a by no means sunny position, for it gets practically no sun at this time of the year, being planted in a shaded part of the rock garden in heavy, moist soil, such as it delights in.

Adonises, too, are pushing up fast; in fact, some of them are actually in flower, notably *Adonis daurica*. These, too, rejoice in stiff, moist soil, and flourish in the bog garden.

Saxifraga desoulavayi is in flower, and so is *Sax. chrysoleuca*; both have yellow flowers, the former being the richer in colour, though the flowers are small, and not equal to those of some of the later flowering species of the same section. *Rhododendron lapponicum* is a bright little plant of slow growth, and is doing fairly well here in a rather dry bog at the base of a pine tree. The twiggy branches are sparsely clothed with small scaly leaves, and the flowers, now fully open are bright purple; some people do not care for the colour, but it is welcome at this time.

Rhododendron dauricum is likewise in flower, but is a much taller shrub with the same sparse habit of growth; the flowers, produced singly at the ends of the branches, are of a rosy purple, and make a nice display at this time of the year. Frost, of course, is fatal to them, and therein lies the danger. These early flowering *Rhododendrons* look well, rising out of a carpet of *Erica mediterranea*, which is also flowering at the present time.

Erica carnea, an old favourite, is showing colour strongly, and Backhouse's varieties are opening fast. These vary considerably in shade, and are really great acquisitions. The flowers vary somewhat in size as also does the habit, some being more compact than others.

Iris histrio and *I. histrioides* are both flowering; inimitable gems from Palestine and Armenia.

Leucojum carpaticum Vagneri is in bud, and will be in flower ere these notes appear unless cold weather puts a check on its precocity.

Sweet violets are blooming in the open, and although not so well developed as frame-grown plants would be, they are nevertheless charming, and afford a nice picking. Two varieties prominent are *Konigin Charlotte* and *Primavera*.

Lonicera Standishii is flowering freely, and so is the Winter Sweet *Chimonanthus fragrans*.

For those who want flowers for the house in December and January here is a list from out of doors:—

Christmas Roses, Sweet Violets, *Lonicera Standishii*, *Chimonanthus fragrans*, *Iris styllosa*, *Erica mediterranea*, and the *Laurustinus*; these, combined with the bright fruits of *Cotoneasters* and *Barberries*, should satisfy the most exacting.

J. W. B., Glasnevin.

Ornamental Hedges.

SOME time ago, when visiting Kew Gardens, the writer was struck by the neat, yet ornamental, character of a hedge surrounding the formal water garden near the herbaceous ground. On closer inspection it proved to be formed of *Berberis stenophylla*, one of the very finest of our spring flowering shrubs. Grown as a free bush, this is a most attractive plant, either singly or in a large group. When planted closely in the form of a hedge the free habit is lost to a certain extent, but the result is not so formal as in the case of the ordinary clipped hedge. Enquiry elicited the fact that comparatively little clipping is required to keep a hedge of *Berberis stenophylla* in order, an occasional cutting back of long shoots being all that is necessary.

In view of the very large number of shrubs now in cultivation, it is rather remarkable that few of them seem to be in use as hedge plants.

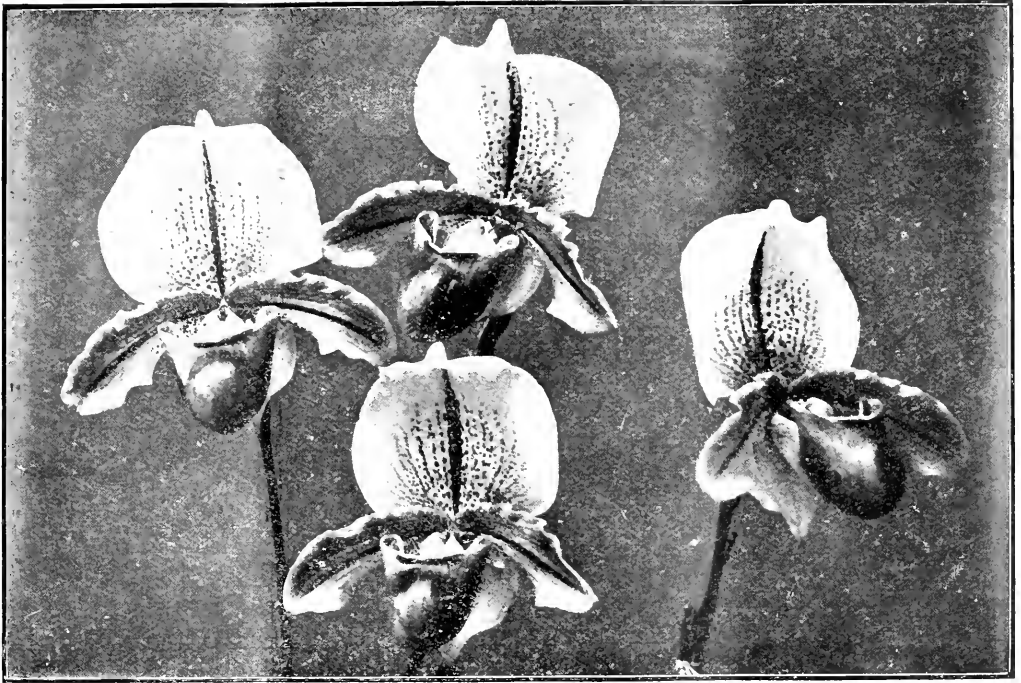
The old established favourites still hold sway—viz., Holly, Yew, Box, Privet, Thorn, Hornbeam, and Beech—and for boundary lines, or where they are intended as fences, perhaps no better can yet be found. For gardening purposes, however, there would seem to be room for more variety and less formality.

There are many ways in which neat-growing shrubs may be used as hedges to give just a little shelter without being ponderous or out of place.

There are innumerable instances where special kinds of plants would benefit from more shelter than a garden naturally affords, and often small enclosures might be formed within which such plants would flourish and pretty

gardens could be made. For this purpose shrubs which do not require laborious clipping every year would be best. The *Berberis* just cited is an example, and would make an admirable screen round a rose garden, for instance, for, while giving shelter to a height of three feet or so, would still admit abundance of light and air, so necessary to the rose, and at the same time the dark hue of the hedge would form an admirable foil to the flowers. There are numerous other newer *Berberis* which might be used similarly, notably *B.*

a trial where neat hedges are required; three especially come to mind—viz., *Ligustrum Delavayi*, *L. Prattii*, and *L. Henryi*. These are all comparatively slow-growing, twiggy evergreens, which could readily be kept within bounds by a judicious use of the knife and without clipping with shears. Then we have a host of *Cotoneasters*, few of which seem to have been used as hedge plants. Among the newer kinds which might be tried are *Cotoneaster salicifolia*, a very fine evergreen with ornamental foliage; a free grower which might



CYPRIPEDIUM LEUCANUM

Gagnepainii, an upright habited plant, the branches not spreading extensively, though it inclines to spread from the root by runners. *Berberis Wilsonae* is rather spreading in habit to be satisfactory as a hedge, but *B. subcanaliculata*, somewhat similar but stronger and taller, might easily form a pretty hedge with little training, and *Berberis Prattii* and *B. Aggregata*, good upright growers, would be well worth trying. Where a tall, strong hedge is required as a dividing line, *B. Chitria* is worth consideration, as it will grow nine or ten feet high, forming a dense mass of shoots, and flowering freely.

Among the new Privets are several meriting

easily reach six feet in height. This species would form an excellent informal hedge, and could readily be controlled without the aid of the shears. *Cotoneaster Dielsiana elegans* likewise should prove suitable, being naturally of an upright habit, though nearly, if not quite, deciduous; this is a free-fruited shrub, and on that account valuable in autumn. *C. Franchettii*, which in its best forms is one of the most brilliant of fruited shrubs, might very well be tried as a hedge plant. The habit is upright, at least in young plants, and could be maintained so by proper pruning. *Cotoneaster buliata*, another fine fruited species, with larger leaves, is also worthy of mention. By

cutting back young plants and inducing the production of numerous shoots from the base, specimens suitable for hedge planting could easily be produced.

It must be borne in mind that these plants are only suggested as garden hedges, and not for field work. Nurserymen having stocks of these free-growing, easily-propagated new shrubs might try some of them as hedges for dividing up their nursery quarters and for forming small sheltered enclosures, where many tender plants could be reared; thus visitors would have an opportunity of noting the merits of the various shrubs for hedge work. What a glorious sight a hedge of *Rosa Moyesii* would be in early June, and again later on when the fruits develop; also some of the fine pink forms of *Rosa Davidii* equally decorative in fruit.

As an enclosure to a heath garden a tall form of *Erica mediterranea* might appropriately be used, some of the forms growing quite five feet high.

There are endless ways of breaking away from the beaten track in gardening; what is wanted is less conventionality and more originality.

B.

Notes.

Cotoneaster Franchetii.

AMONG the newer *Cotoneasters* none is more generally useful than this. Lately the fruits have been particularly attractive, and the graceful, spreading habit of the bush is more pleasing than the stiffer growth of *C. Simonsii*, an old favourite in gardens. The colour of the fruits varies to some extent, being generally orange red, but in some plants the red is more pronounced. It is worth while raising seedlings and selecting the best of them, with the brightest fruits. Where shrubs are wanted in quantity, all will be useful, especially where screens are required or informal boundary lines. Being evergreen, the plant is useful in many ways. The leaves, up to an inch and a half long and over half an inch wide, are thickly furnished with a grey, felty covering on the under-surface.

Like *C. Simonsii*, this newer species is prone to lose many of its leaves in exposed positions or during a spell of exceptionally severe weather, but generally it retains a much greater proportion of them than *C. Simonsii*, which here at least is practically deciduous.

DUBLIN.

Pyracantha crenulata var. *yunnanense*.

THIS little-known shrub is now in its winter garb of bright crimson fruits, and wins the admiration of every passer by. Although quite hardy, it is as a wall plant that it shows its greatest beauty and usefulness. Of neat growth, flowering freely in spring, fruiting freely in winter, and an evergreen, what more could be desired in a plant for covering the front of a house. Near the entrance to the Botanic Gardens at Glasnevin a plant may be seen at present clothing part of the wall of a cottage belonging to that establishment, and many are the visitors who pause to look at it. On the same wall *P. Gibsii* is growing, but pales in comparison with *yunnanense*, the fruits being smaller and of a much less brilliant colour. Both, however, are excellent wall plants, and should be noted by all who want good things for house fronts or similar positions.

Pulping Fruit for Jam.

IN the *Journal of the Board of Agriculture* for October, 1918, there is a reprint from the *National Food Journal* of 11th September, giving an account of the work done in England in dealing with large quantities of fruit.

"Early in the summer of 1917 it became evident that the fruit crop for that year was likely to be exceptionally large." Briefly, it was soon evident that some means would have to be devised to prevent loss, and several schemes were inaugurated to prevent loss; finally, pulping stations were established near many of the big fruit-growing centres, and huge quantities of plums, damsons and apples were pulped. The undertaking proved a financial success, and "not only proved self-supporting, but has shown a profit that gives a good return upon the capital involved; and the scheme has been so satisfactory to fruit-growers that the Ministry is in almost daily receipt of requests to set up further stations in the fruit-growing districts."

"As evidence of the promise of permanence in the new industry, it is enough to add that frequent applications have been made by fruit-growers and jam manufacturers desirous of purchasing the pulping stations and their plants."

Considering the possibilities of Ireland as a fruit-growing country, it would seem worth while fruit-growers and jam manufacturers on this side giving some attention to the question of pulping stations in Ireland.

Amateur Fern Growing.

By HENRY DRURY, M.D.

ANY plant lover who has the misfortune to have to live in town, may derive more satisfaction, and therefore more pleasure, from the cultivation of ferns than from any other plants.

A fern house is the ideal condition, but not essential for success. We have known a fern lover and enthusiast who had, we believe, every British fern growing on the roof of his house, in the heart of London—not a yard of garden on the ground level, and no glass shelter on the roof garden.

As most town houses have some space behind,

up by oneself with the help of any handy-man. If a wall sufficiently high is available, a "lean-to" house is recommended, or, better still, a " $\frac{3}{4}$ span," as it gives head-room for the ferns on the back wall, which otherwise must be left bare, for a couple of feet, or else the ferns at the top grow against the roof and get distorted and discoloured by the moisture on the glass.

The steeper the slope of the roof the better, so as to carry off the moisture that condenses on the inside of the glass, for as the overlap of the panes gets clogged with dust, &c., the water does not run away on the outside of the lower pane, but tends to drop down on the plants below, causing havoc thereby. If making a fern-house again



BERBERIS AGGREGATA
(One of the newer Barberries)

euphemistically called a garden, we will choose that as the site of our fernery, and decide that it is to be a fern house.

To attain success it will be necessary to think out the details beforehand of all the preparations to be made for the reception of plants, and carry out all these to completion before a single plant is bought. Many failures are due to first getting the plants and then trying to make a place for them.

Those who cannot afford a well-built greenhouse need not be discouraged. With a few loads of second-hand bricks the house can easily be run up, no glass being required except that for the roof, and a very satisfactory fernery is thus obtained. Better still, however, will be a well made greenhouse, which can be bought in sections from one of the several well-known firms who specialise in such things, and can be put

we would have a small slip of cardboard or rubber inserted at each side of the overlap, to keep the panes sufficiently apart, so as to carry off the condensed moisture, and to enable one, if the space became clogged, to clear it with a stiff brush. The overlap should be at least one inch.

The house should have a north aspect if at all possible. If not, choose anything but a south aspect. With a north aspect little, if any, shading will be required. With any other aspect shading will be necessary. Shading is a great bother, and as in town there is so much soot and dust, one cannot have a permanent shading, for it becomes so dirty that it makes the house too dark. Most ferns like the light and grow towards it always: it is the direct sunlight they object to, so with a north aspect shading is not required at all, though a little

light shading from mid-May to mid-July is rather an advantage.

The ventilation arrangements are very important. On the front there should be at least two sashes which can be opened, one near each end. Additional opening sashes in each end are an advantage, as thus air can be admitted from whatever aspect is sheltered from the wind, for ferns dislike direct draught. Also there should be at least two ventilators in the roof, at its highest point, near each end.

If funds allow, all metal fittings, hinges, fastenings, &c., with their screws, should be of brass, as the constant damp soon rusts iron fittings, iron screws rot the wood, the hinges stiffen and burst off, &c.

No artificial heating should be installed. It becomes a nuisance, and we want our hobby to be only a pleasure. To be constantly anxious about frost during autumn, winter and spring, leaves only two-thirds of the year for unmixed pleasure. To feel that one must go out on frosty nights to keep the fire going, no matter what engagement holds us, or what weariness or indisposition is over us, makes the heated greenhouse a real burden, a burden too we may not be able to bear ourselves, for the town dweller is often a busy person, whose duties may even necessitate frequent absence from home, thus he may have to rely on some one else to look after his hobby, which is neither fair to the person nor to the hobby. Put heating out of mind as an abomination, and cheer yourself with the thought that it is quite unnecessary. If you grow all the beautiful ferns which in no way require heat, you will need an enormous house and unlimited time on your hands.

The moment you decide to get a house, and before you do anything else, get together the materials for the ferns to grow in. One cannot expect good crops without well prepared ground, and the same applies to flowers, fruit or ferns. If you want them to grow well, you must give them good stuff to grow in and the kind they like. Get then a load of good fibrous loam—that is, sods, or “scraws,” as the country people call them, not more than 3 inches thick, taken from old mountain pasture in a district free from limestone. These sods should then be carefully built, grass side down, into an oblong or square pile, by preference, against a wall, so as to get partial protection from heavy rain. They should remain thus till all the grass and other vegetation have died and decayed, which may take some months, hence the necessity of attacking this part of the preparations first of all. If you can leave it six months, or more, all the better, for not only will the vegetation decay thoroughly, but obnoxious vermin, worms, beetles, &c., will die also, or else evacuate the territory a most desirable condition.

Next get a load of mountain peat—*not* “turf,” such as we get in bogs and use for fuel—but sods from the mountain, of brown fibrous peat, permeated probably with roots of bracken; the more fibrous it is the better. Treat it exactly in the same way as the loam.

Then get a load of leaf-mould and build it also into a compact square heap.

Finally, sand is a necessity. It is also a difficulty. “Silver sand” is the best, if you can afford it, but it is expensive. It can be obtained

from garden supply firms by the hundredweight, of various degrees of fineness or coarseness. Medium or coarse is perhaps the best when dealing with rockery work rather than pot plants. Sea sand should not be used—at least, that from the neighbourhood of Dublin, for even in the absence of shells, it contains so much limestone sand that it is quite unsuitable, in fact fatal, to many ferns. This is the reason why “silver sand” is so suitable, as it is lime free. A substitute for silver sand can be obtained at small cost, except the cost of personal labour. Get a load of “freestone” which is “rotten” or disintegrated granite, and so lime free—from the mountain; riddle this through a fine sieve. What does not run through is then pounded up and again riddled, and so on. An old horse-manger makes a capital mortar and an iron bar an efficient pestle. Excellent sharp, coarse and fine mixed, lime free sand is thus obtained for our purpose.

We have then obtained good material for our ferns to grow in. The preparation of it we will deal with later on, when the reason for the directions about making separate square or oblong heaps will be seen.

Incidentally, we may say that the coarser “freestone” will come in as a most suitable constituent of our concrete cement floor.

Having selected the site, and got the house, the preparation for the reception of its guests begins. First examine the back wall, against which the house is placed, and cement up every hole and deep crevice in it, otherwise an army of snails and other vermin will march out every night to wage war on your succulent plants, and retreat to their safe quarters every day when you go to seek them in your wrath and indignation. Seal them up, to perish.

Next lay down a concrete floor over the *whole* interior surface, specially tight against the back wall, to exclude worms, with a slight slope from back to front, and a good deep, half-round gutter-groove running along the sides and front, sloping to one end. This should open outside into a trap, such as one has in areas for carrying off surface water, otherwise all kinds of pests will find their way up your water channel from the outside, even rats and mice; for all manner of beasts, even humans, love to explore a hole, and though there is only one into your greenhouse, they will find it out. Besides, things you may wish to keep inside, which we will speak of later, will also explore the one and only hole, and, announcing the glad tidings to their friends, and even to their enemies, all will troop out as your enemies troop in, so trap it.

Next, we recommend that the house shall shelter a rockery and not pot plants, therefore no stages are required. Pot plants are a constant source of anxiety, and again, we are out for pleasure. If one is away for a day or two, or a week, the rockery looks after itself and takes no harm. The pot ferns, however, would all suffer, and some—the choice ones surely—would be as dead as Qu-en Anne. In the rockery it is wonderful how they will luxuriate in being left alone; for, at first, at least, they will probably suffer from over-kindness, drowned one day with water, smothered another day by heat, perished the next day with draughts. After a time experience and mutual forbearance will work wonders.

By this time our cement floor has set, and we have got two or three good coats of paint on all the woodwork.

The back wall is now our first care. It must eventually be covered with ferns, and usually they

We will suppose the wire netting is 3 feet wide. Now get some sods of turf such as are used for fuel. Select the softer brown kind, as even in shape as possible. Measure down from the *top* of the wall and mark on it the number of widths



BERBERIS STENOPHYLLA

(See Hedge Plants)

are given no chance at all in such a position. We cannot work at it well after the rockery is made, so it must be done first. Get enough wire (rabbit) netting of about one inch mesh to cover all that part of the wall to be left exposed by the rockery

of wire that will be required. Then along the *lower* line of the last width, nail to the wall, with the largest wire-nail spikes, the turf sods, end to end, two nails in each, leaving about half an inch between each sod. Just before driving home the nail,

loop round the neck of it about 2 inches of copper wire. Make another line of sods in the same way along the line of the top of the lower width of netting. Now by means of the copper wire loops fix the *lower* edge of netting close to the turf sods. Next bend out the netting and cover it on the inside with moss, damped and pressed flat; fill in prepared soil firmly as you proceed up till the space is filled to the next line of sods; fasten the netting above with one turn of the copper wire, leaving the ends free. Make another line of sods at the next level; fix the next width of wire at the bottom with the free ends of the copper wire which you have left, and then cut them short or double them in. Line this width of wire with moss, fill in the soil and fix as before, and so on till the wall is completely covered to the top—there it is *not* fixed to turf sods, but to nails driven into the wall direct. This requires a considerable quantity of soil, but it is worth it, as the ferns then have a good chance, and will take advantage of it. If, however, soil is a consideration and difficult to get, the space may be considerably reduced, and much soil saved, by cutting, with a fine-toothed saw, one-third off the thickness of each turf-sod. This is easily done. The reason of the lines of turf-sods will be obvious. They keep the netting a definite distance from the wall and give it a firm line of fixture; each layer supports the soil above it, which is then not of such weight as to bulge out the wire netting and fall through it. The half inch space between each sod allows water to trickle through and moisten the lower section, instead of running down the wall and leaving the lower section dry. Besides, the turf when thoroughly wet retains the moisture for a long time and saves the life of many a fern. By doing it in sections from below up, it can be done quite easily, whereas otherwise it would be almost impossible. As a matter of fact netting 2 feet or 2 feet 6 inches wide would be even better, and if desired, further support against bulging can be made by fixing here and there along the middle of the space half a sod of turf, by one nail, with a copper wire loop, on the same principle as the lines were made.

Next, an arrangement must be made for watering this. Get an ordinary piece of lead gas pipe, sufficiently long to stretch the whole length of the house and down from roof to floor. Take a very small piercer, a shoemaker's awl is the best, and having closed one end by beating it up, gently pierce (so as not to dent) the gas pipe, every 3 inches for the length of the house, from the closed end. The holes must be very small and the intervals between them not too close, otherwise the pipe will not be capable of supplying them all, and the far end of the wall will get no water. Care must be taken to get all the holes in line on the pipe, and the best way to do this is to coil the pipe in a spiral on a flat surface and then pierce it as it lies. It is then put up in position with loops of copper wire, so that the jets from the holes will be directed into the soil at the top of the wire; this explains why no line of turf sods was made at the top. The water must on no account spurt out into the house, but must be directed right into the wire cutting, hence the necessity of making the holes in accurate line. The other end can be attached by a piece of rubber tube to the water tap, and so the whole back may be automatically and efficiently watered.

It is necessary to say something about the stones, or small rocks, which we are going to use. As many ferns do not thrive where lime is present, and others will be killed by even small traces of it, we must exclude limestone in all its forms from our rockery. This is a difficulty, for in many parts of the country it is the only stone to be obtained locally. Quite sufficient lime is dissolved out of the stones by the water we supply to the plants, to poison the surrounding soil which we have so carefully kept lime-free, and so kill our plants. Sandstone, quartzite and granite should be used, if all three can be obtained, so much the better; they give a varied appearance and colour to the mound. Sandstone by itself is very excellent, absorbing moisture, it makes a cool damp nestling place for the roots; in its moist chinks spores germinate and cover it with green young growth. Quartzite has not these attractions, but, especially if veined with iron stain, the whites and reds make a very attractive ground work and background to the ferns. Granite has none of the virtues of either, yet makes an excellent rock-work.

Good large stones should be obtained of slab form rather than rounded, and of very irregular shape—as regularity tends to formality, which we must endeavour to avoid. The pockets when formed must be quite irregularly disposed, and not made in formal lines all along the rockery. The stones, too, should be placed so that water falling on them is directed back to the soil and plant behind, not to fall in a stream from the front, to wash away the soil from the plant below.

We may now at last start the rockery. It may either be placed in the centre of the floor with a path all round, or built up against the wall. In either case, determine first what height it will be—*i.e.*, what slope it will have. We will suppose it to be against the wall. A long stick should be cut which will reach from wall to ground giving the slope. Two rows of vertical columns should be made of bricks, or drain pipes set on end, which will afterwards serve as fixed and solid steps for climbing up to attend to the plants, as, if the rockery stones are used for this purpose, they will gradually get displaced and spoil the “pockets” and injure the plants.

Next, at the middle of the wall space, a good heap of large stones, bricks, &c., should be made. Over these a good layer of smaller stones, &c.; over this a layer of small cinders and gravel which should extend down to the outer edge. It is well to outline the outer edge of the rockery with large blocks of stone, not too regularly laid, and such as will lie firmly without rocking about on the concrete floor; they should, further, be fixed in position by bits of cement here and there to keep them from shifting. The central heap of stones, &c., serves two very useful purposes—it ensures good drainage, a *sine qua non*, and it saves a great deal of soil.

The rock-work is now built from below up, laying a good layer of prepared soil over the drainage, and then setting the rocks so as to make good pockets filled up with more soil. Large stones should be used so as to leave plenty of room between each plant, for its future development, otherwise they will become crowded and ineffective, the stronger growing kinds smothering the weaker.

The upper part of the rock-work should be occupied by the larger growing ferns, so here the

largest stones should be used; the tendency is to do just the opposite—viz., to select the largest at the commencement of the work—that is, the lower part, and find that we have nothing left for the upper parts but small stones. Before the stones are set in place, the soil in which they are to lie should be very firmly tamped down with a heavy block of wood, so as to prevent as far as possible the sinking and settling down of the stones, by which great displacement of the whole upper fabric would occur. As the work of making the rockery will occupy several days, it is a good plan to give it a good watering every evening, the last thing before knocking off work. This helps the soil to bind up and the stones to settle. Any displacement of newly-laid rocks can be rectified next day, and the soil will have drained enough during the night to allow of work, without converting it into mud. Great care must be taken not to make a mound with stones sticking out of it, like the almonds in a plum-pudding, such as is seen in many old-fashioned gardens, or in the front "gardens" of many suburban houses. Real rock-gardens are now so common that the proper form can easily be studied by anyone, in the various public parks and gardens; and, further, as full instructions can be got in many publications, cheap and dear, on rock-gardens, we will not go further into the matter here.

(To be continued.)

A Mild Season.

Up to the end of December the weather here has been exceptionally mild, and vegetation is too forward. We have experienced this state of affairs too often in Ireland to be deceived, and know full well that ere the end of April we may have many bitter days to come through. Nevertheless, we cannot ignore the present condition of things and must take what steps we can to mitigate the evil of too early growth. One result of the comparative mildness has been seen in the sustained activities of slugs and other pests which prey on tender green shoots. The rock garden is a favourite resort of slugs, snails, woodlice and such like, and only constant watchfulness will save some of the choicest gems from destruction. Many plants there are making soft young growths, and even some Saxifragas are coming into flower. Nothing will save them but making things unpleasant for the pests which devour them. If possible, a systematic hunt should be made periodically under all the strong growing plants where the enemy lurks by day. Round those plants most often attacked—viz., Primulas Saxifragas, Gentians, &c.—shower plenty of tobacco powder, hellebore powder, Sanitas powder, soot, lime or even broken glass, crushed bricks, in fact, any sharp material available. Many herbaceous plants are threatening to push up their growths, and these will certainly be eaten over unless protected by a ring of sharp ashes or sand.

Fruit trees on walls, especially Pears and Peaches, are in a dangerously forward condition; in fact, Pears in the open are bursting the bud scales. Little can be done for the latter, but nets, tiffany or any similar protecting material, should be kept ready to hang over the wall trees. Possibly a spell of cold weather will supervene and check this forward movement ere much harm is done, but we must keep a watchful eye on all our plants and take what steps we can to save them.

WATCHFUL.

The Menace of Silver Leaf.

REPORTS received by the Food Production Department indicate the increasing seriousness of Silver Leaf disease in fruit trees. In some localities it has become almost a scourge, and some of the most valuable varieties of Plums, especially Victoria, are threatened with extinction unless drastic measures are taken to check its extension. The disease occurs also in Apples, but less frequently.

Unless active steps are taken to combat it, Silver Leaf spreads relentlessly. It cannot be too widely known therefore that if the affected trees are systematically and energetically dealt with it is possible very largely to control the disease. *By promptly cutting out silvered branches and by rigorously removing all dead trees, or trees which have begun to die back, it has been proved in practice that the spread of the disease is checked.* No other treatment can as yet be advised.

In view of the urgent need of combating Silver Leaf, the Food Production Department strongly urge fruit growers throughout the country, especially in the important plum growing districts, to take energetic measures to destroy all trees which have begun to die back, and to cut out the silvered branches of trees otherwise healthy. It is worth some sacrifice to take this in hand at once, for the fungus fructifies chiefly in autumn, and the longer the dead wood bearing the fungus is allowed to remain the greater is the risk of infecting other trees. As it is unlikely, however, that this work can be completed before the leaves fall, all silvered branches and trees which are dying back should be conspicuously marked at once, so that they can be removed as soon as opportunity permits.

In carrying out these operations the following points must be borne in mind:—

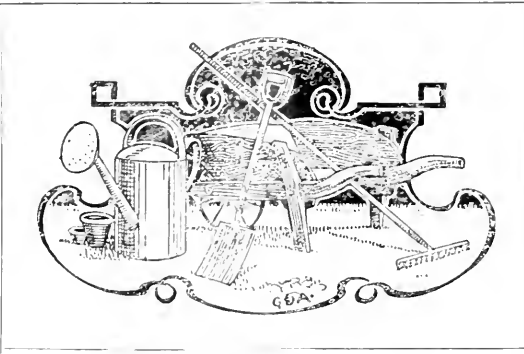
1. The minute threads of the fungus are often to be found in the tissues of the wood considerably further down the branch than the level at which the silvered leaves appear. Affected branches should therefore be cut back to a point where no brown stain in the wood can be found.

2. All wounds made by severing branches should be pared over and covered with Stockholm tar. In the ordinary routine work of the garden also care should be taken to avoid injuring plum trees and to apply Stockholm tar to all wounds.

3. Dead or dying trees should be completely grubbed up. Exposed stumps on which the fungus can fructify should not be left in the ground.

4. Severed branches and trees that have been grubbed up should be removed from the plantation immediately and be used for firewood. Small branches should be burnt on the spot. If it is necessary to keep the firewood for any time, it should be stored as far away as possible from fruit trees and preferably in a shed.

The success of the above measures largely depends upon the co-operation of all fruit growers, including the owners of fruit trees in private gardens. Neglected fruit plantations are not only a great danger to other trees, but also to those orchards which are maintained in a proper and sanitary condition. In view of the threatening character which Silver Leaf disease has assumed it is earnestly hoped that an active campaign against it on the lines indicated above will be commenced and maintained in all parts of the country.—*Journal of the Board of Agriculture*, October, 1918.



Allotments.

A LARGE number of allotment holders cease work on their plots, from various causes, directly the crops are harvested. This is unfortunate, because notwithstanding the lack of opportunity to work the allotments owing to the shorter days, it is important that all vacant ground should be dug over as early in the winter as possible. Apart from the aspect of order and cleanliness, when land is dug early it derives the benefit from frost, and the weather is also able to act on insect pests hibernating in the soil.

NEW ALLOTMENTS.—With the enormous development of allotments which has taken place since the outbreak of war, it is not expected that this season will witness a corresponding increase, but in cases where new plots are taken, and still under grass, the ground should be bastard trenched if possible. Failing this, deep digging to the full depth of the spade should be resorted to, chopping the grass turves up and completely burying them. Previous to this, if large growing weeds are present, these should be cut with a scythe and burned. With newly broken grass land insect pests are often troublesome during the first season and it would be an advantage if the land could also be dressed with lime.

CULTIVATED PLOTS.—Already, men who realize the advantages of early digging have commenced. A point that cannot be too strongly emphasized is the necessity to avoid digging or trenching allotments when the land is wet or in an unsuitable condition owing to being frozen, &c. The bad effects which follow when land is dug under unsuitable conditions are apparent throughout the whole of the season.

MANURE.—The carting of manure on the plot should be seen to at once if it has not already been done. The demand presently will exceed the supply in large towns, and much trouble and also additional expense will be avoided by making early application. A good average dressing of farmyard manure for a unit plot of 300 square yards would be 25-30 cwt.

LIME.—Lime should not be applied at the same time as farmyard manure. Quicklime should be procured and slaked into a fine powder. It can then be evenly distributed over the plot. A good dressing for 300 square yards is 4 cwt. applied once in three years, or half the quantity applied every other year. The application of lime is particularly advised to allotment holders, to prevent the disease known as Club Root or Finger-

and-Toe in Cabbages and Turnips. This disease is quite as prevalent on old allotments as Potato Blight in bad seasons, and moreover, is very difficult to eradicate once it is firmly established. I shall continually draw attention in these notes to this disease, being convinced it requires the plotholders' most earnest attention. Lime is the best and most practical preventive of Finger-and-Toe known. It is important to remember that land having produced a diseased crop is certain to be infected, and that it will be impossible to combat the disease unless proper precautions are taken.

POTATOES.—Where "seed" has been saved from last year's crop, they should now be sorted over and placed in sprouting boxes. The best practice is, of course, to place the tubers in the sprouting boxes directly they are lifted, but this is not always practicable. No time should now be lost or the tubers will commence to sprout. The "seed" should be placed in single layers with the eyes uppermost, removing tubers which show signs of decay or are unsound. Keep the boxes in a position well exposed to the light and where they will be in no danger from frost.

SEEDS.—A large number of allotment holders can afford to purchase the best seeds that are offered, and as many of the finer stocks are limited it is wise to obtain seeds early. In any case a better selection can be obtained, and seedsmen appreciate the buyers of small quantities who purchase before the rush of orders commence. On many allotments in England plotholders co-operate in the purchase of seeds. A considerable saving can be effected in this manner, and in the case of bulky articles, such as Potatoes, it is a most desirable procedure. Very little organisation is necessary, where there is already a working committee and secretary. In the case of a small town the varieties of seeds which succeed locally will be known, and it would be wise to confine allotment holders to this selection. Notices could be posted on the plots that orders would be received by the secretary on or before a certain date. These could be collected and added together and then forwarded to the approved seedsmen. Experience has demonstrated that in transactions of this kind, the secretary should state *orders must be prepaid*.

PLANNING THE PLOT.—In Belfast a model plan is published giving suggestions to guide allotment holders. A selection of vegetables is included, quantities of seeds required and distances apart of the rows, attention being also paid to the rotation of crops.

G. H. O., Belfast.

Pinus Parviflora.

THE JAPANESE WHITE PINE.

THIS is one of the five-leaved Pines, and was introduced from Japan by the late John Gould Veitch. Of comparatively slow growth it is well adapted for small gardens, and forms neat specimens which can, freely at an early age. The general aspect of the tree is distinct, and the silvery appearance of the leaves enhances its value as an ornamental species. Abundance of cones, young and old, are generally to be found on the tree at the same time, and owing to the slow growth they are generally easy to reach, rendering this one of the best species for studying the production of the flowers and cones.

New Year's Notes and Notions.

CHAMBER OF HORTICULTURE.

ON, and out, into the unknown of another year! The last provided some problems, this new gift of time some fresh facts to face, with a few innovations worth watching as marking a new departure, prominent among which is the newly constituted Chamber of Horticulture. In response to enquiries, one of which is:—"Is it a trade organisation, or what is it?" a brief notice given in the *Gardeners' Chronicle* of December 21st, 1918, may be aptly quoted; this, and we cannot fail to notice

"The Chamber is already in request by Government departments for the purpose of advisory work, and, from the trade point of view, one of the problems to be met is that of competition among official bodies and traders. The setting up of special committees for arbitration and conciliation, the establishment of labour conferences, and the drawing up of a broad-minded scheme for dealing with after-war conditions, should tend to the establishment of closer relations between the various sections of the trade, which may be said to be the first and all important aim for which the Chamber of Horticulture has been inaugurated."



CYPRIPEDIUM INSIGNE.

it, is under the heading "Trade Notes," runs:—"The Organising Committee of the Chamber of Horticulture has before it many suggestions for work, and proposes immediately to take steps to deal with the important questions of statistics, mechanical cultivators, imports and exports, and the treatment of diseases. These items, by the general consensus of opinion, call for prompt measures, and the Committee will put forward definite details in the near future."

Further subjects claiming the attention of the Chamber include soil sterilization, treatment of seeds (electrically and otherwise), fuel consumption, glass-house construction, and cold storage, research work, and the serious questions of transport difficulties, are down on the programme of the Committee for prompt treatment.

We have nothing to add to the above, beyond calling attention to the strong trade taste in the tail, which does much to answer the question prompting the excerpt.

ROYAL HORTICULTURAL SOCIETY OF IRELAND.

Sir John Ross of Bladensburg, K.C.B., who presided at the 89th Annual General Meeting, December 17th, in place of the President, the Marquis of Headfort, unavoidably absent, in moving the adoption of the report, spoke of the war work carried out under the auspices of the Society, viz.: the four years' work of the Irish Branch of the Vegetable Products Committee, the assistance given to the Air Board in securing Irish ash timber for aeroplanes, the question of forestry, now brought under the aegis of the

Society by the formation of a Committee of Arboriculture, and the latest work undertaken on behalf of the War Horticultural Relief Fund to aid our allies, France, Belgium and Serbia, in restoring the gardens, small holdings and orchards devastated by the German invaders. A good record. Returning to its more immediate sphere of work a Spring Flower Show has now been arranged for April 10th, 1919, the schedule for which is in hands. An item worthy of note is the sanction of the Annual General Meeting to convert the name of the veteran society, now in its 90th year, into that of the Royal Horticultural and Arboricultural Society of Ireland, subject to its being ascertained that there are no difficulties in its being done.

IRISH FORESTRY SOCIETY.

This Society, which has a movement *en tapis* for memorial tree planting in Dublin or the vicinity to perpetuate the memory of the Irish Regiments and Naval Units engaged in the great war, is now in co-operation with the Royal English and Royal Scottish Arboricultural Societies in the formation of a committee of its members, who are members of either Houses of Parliament, in the interests of national forestry. The Marquis of Sligo and Viscount Powerscourt, K.P., as members of the Irish Forestry Society, have signified their willingness, as representative Irish Peers, to serve on the committee. The Irish Forestry Society, although practically confined to propaganda work, is hampered in this direction for funds, having as its sole annual income a sum rarely exceeding £40, derived from members' subscriptions of 10s. 6d. per annum.

IRISH BENEFIT SOCIETIES.

The recently held annual meeting of the Drummond Benefit Association disclosed very healthy conditions with cash assets of all but £3,000. This being the 21st annual meeting facts and figures disclosing a further similar sum having been disbursed in benefits from its inception in 1897, speaks volumes for the quiet unostentatious work it has already accomplished.

IRISH GARDENERS' ASSOCIATION.

Here, too, an equally satisfactory state of things permeates a body of practical members of the profession. 1918 saw an innovation in the provision of certificates of membership available to head gardeners, vouching their *bona fides* as trained practical men. The Association is to be congratulated on applying for and obtaining recognition by the Corporation of Dublin. A deputation for this purpose was most courteously received by the Lord Mayor at the City Hall, a subsequent motion that the Association should be recognised by the employment of capable men for such civic work as comes under the scope of gardening and tree-planting being carried by the Councillors. The wages question also broached by the deputation was equally sympathetically received, and practical recognition has already been obtained.

K.

Notice.

The Royal Horticultural Society will carry out trials of Dwarf French Beans, Cauliflowers, Lettuces, Parsley, Early Potatoes, Turnips and Swedes in their Garden at Wisley, Ripley, Surrey, during 1919. Seeds, &c., for trial should reach the Director (from whom the necessary entry forms may be obtained) not later than January 31st, 1919.

Wedding Bells.

Ox St. Stephens Day two interesting weddings took place in Newry.

Second-Lieut. Norman Smith, Royal Flying Corps, was married to Miss Gwendoline C. Locke. The bridegroom, who is the eldest son of Mr. G. N. Smith, and grandson of Mr. Thomas Smith, of Daisy Hill Nurseries, was previous to the war employed in the Rover Works, Coventry. He joined the 11th Hussars at the age of 18½, and has seen much active service. He was subsequently transferred to the York and Lancaster Regiment, and took part in the Gallipoli campaign, serving also in Egypt and France. This year he was gazetted to the Air Force, and while leading a flying squadron last October his machine was brought down by the Germans. Lieut. Smith escaping with but slight injuries. He was a prisoner of war in Germany until the signing of the armistice.

The bride is a daughter of the late Quartermaster J. B. Locke and sister of Second Lieut. Wm. Locke, who is a son-in-law of Mr. Thomas Smith.

On the same day Miss Eileen Sarah Smith, second daughter of Mr. and Mrs. G. N. Smith, was married to Mr. Thomas Grills of Fernoy. The bridegroom, formerly of Newry, is now engaged in the timber trade in Fernoy.

To both couples we offer our hearty congratulations and wish them a long and happy union.

For the above particulars we are indebted to the *Newry Reporter*.

Correspondence.

TO THE EDITOR OF IRISH GARDENING.

SIR,—May I take advantage of the hospitality of your columns to state that I have recently been overhauling the collection of oaks at Aldenham, and I am gratified to find it more nearly complete than I had anticipated.

I cannot grow tender ones such as the well-known *Quercus suber*, which does so well in the west of England, nor semi-arbifolia from the Himalayas, nor crassipes and glabrescens from Mexico, but setting these aside, of hardy members of the genus I have over 100, counting species, hybrids and varieties, and they include such rarities as *Q. Fabri*, *aliena*, *ambigua*, *Schneekii*, *incana* and others.

The following, however, are not represented:—*Q. agrifolia*, *alatifolia*, *Audleyensis*, *cinerea*, *chrysolepis*, *coccinea*, *glauca*, *heterophylla*, *inctoria*, *leana*, *lyrata*, *mongolica* (true, not *lanuginosa* *syn.* *Mongolica*), *Morehus*, *nigra* (true, not *Marylandica* *syn.* *nigra*), *obtusata*. Should any of your readers have a young plant of one of the above to spare I should be very grateful if they could let me have it, and would gladly reciprocate by sending other oaks, or specimens of other choice plants of which I have a great variety.

Besides the above species I also lack the following varieties, to which the same remarks apply:—*Q. castaneifolia*, *algeriensis*, *cerris*, *austriaca*, *cuspidata*, *var. da*, *ilex*, *ballota*, *i. crispa*, *i. Fordii*, *i. Chabii*, *i. latifolia*, *lanuginosa*, *dissecta*, *Lucombeana*, *cana*, *maior*, *i. crispa*, *i. diversifolia*, *i. Fulhamensis*, *i. pseudo-suber*, *palustris*, *pendul*, *pendunculata* Haas, *sessiliflora* Falkenbergensis, *sessiliflora* muscoviensis.

V. GIBBS.



January The Month's Work.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

Now that the war is over and the possibility of food shortage is, we hope, removed, it may be expected that this department will again assume something of its old importance, and the Parsnips and the Potato will be relegated to their proper situations in the Kitchen Garden.

Where herbaceous borders were dug up and used for the important war-time work of food production, it cannot be expected that these can at once be made to present their former appearance, but the judicious use of annuals will make up for any shortcomings and will give a splendid and lasting display. The ground for annuals should be trenched as soon as possible, and plenty of burnt garden refuse, and some good manure worked into it. This applies also to ground where Sweet Peas are to be grown.

Climbing plants on pergolas and fences may be attended to this month when the weather is not too cold for the work to be done in comfort. Clematises of the Jackmanii group should be cut hard back, if not already done. The Lanuginosa section should have the growths thinned, removing the weakest, and training those left on the supports, whilst the montana varieties may be allowed to retain all last season's growths, which should be gracefully disposed, allowing some to hang freely from the overhead poles.

Violets in frames should be freely ventilated whenever it is not actually freezing. They should be well watered whenever necessary with tepid water, and an occasional dusting with soot, well watered in, will improve the colour of both leaves and flowers. Cuttings of bedding plants in cold frames should have the lights removed whenever the weather is suitable. Marguerites and Calceolarias should be regularly pinched back, and the soil between them should be lightly stirred with a pointed stick.

THE FRUIT GARDEN.

Pruning of fruit trees should be hurried on with on all favourable days in order that full advantage may be taken of any suitably still weather for winter spraying. Fruit trees are alarmingly forward this season, and unless cold weather sets in soon winter spraying will become dangerous at an early date this year. After the tree fruits the bush fruits should have attention, leaving the pruning of Gooseberries until last in districts where bullfinches are troublesome. A

sharp look out should be kept for these beautiful pests of the fruit grower, and measures taken to deal with them. They usually start on the Damsons here, early in January, after having taken toll of the *Prunus Pissardii* in the pleasure grounds. From the Damsons they proceed to the Plums, and, unless they are shot, they follow on to the Apples as soon as the trusses on these have opened enough to expose the flower buds, with which they strew the ground underneath. The only remedy I have found is a .22 bore rifle with small shot cartridges.

If suitable weather occurs, planting may be proceeded with, but it is better to wait a month unless the ground is in good order. Newly planted trees should be well staked immediately, and should be well mulched with strawy manure.

During frosty weather manure can be wheeled on to the bush fruit quarter ready to be forked in when the pruning is finished. Old worn out trees can be grubbed up with a view to replacement with young specimens of good varieties.

Wet weather periods may be utilised by repairing nets, and preparing stakes, and for frequent examination of the fruits in the fruit-room.

THE VEGETABLE GARDEN.

Digging and trenching are the most important operations in the Kitchen Garden during January, and this work should be got on with whenever the ground is dry enough. Generally speaking, the best spells of weather should be utilised for ordinary digging, leaving the trenching for broken weather, when ordinary digging would be inadvisable. If the Onion ground has not already been dug or trenched (preferably the latter) it should receive attention first. The Onion pays for good treatment and the ground should be heavily manured. When extra large bulbs are appreciated, and a glass house is available, a start may be made about the middle of the month, sowing the seeds in pans, covering lightly with fine soil, and well watering them in. The pans should be placed in a gentle warmth, removing them to a cooler structure when the seedlings are well up. Leeks, Lettuces, and Cauliflowers may be started in the same way.

Frosty and broken weather may be availed of for mixing and making up hotbeds. Plenty of tree leaves should be used in their composition to ensure a steady and lasting heat. Hotbeds are useful for forcing Rhubarb and Seakale in the open garden, first placing large pots or tubs over the crowns, and then making up the beds over these. Many early vegetables can be forced in frames placed on a well made hotbed, amongst which may be mentioned Potatoes, Carrots, Turnips and Lettuces. These crops will be cleared off in time to plant Cucumbers and Melons in the frames in June, and when these are finished the bed itself will provide valuable material for digging into the ground as manure.

Midland and Northern Counties.

By W. ROBERTS, Gardener to Lady Emily Bury, Charleville Forest, Tullamore, King's County.

It is to be hoped that this year we have just entered will see a revival in all the different sections of horticulture which have suffered so much during the past few years, though I am afraid many of the fine old centres will never resume their former position in that respect.

OUT-DOOR FRUIT. All pruning, tying, nailing and spraying should be completed as soon as possible now. The latter operation is not, in most places, given the attention it deserves, chiefly I suppose through the cost of material and labour; but if a section of the trees is treated each year it will help to spread the expenditure and enable one to see the benefits without too great an initial outlay. Although the advantages are not immediately discernible it always pays in the end. Any planting or shifting not already completed should be attended to during any dry period, and where possible the ground worked around the trees or bushes.

IN-DOOR FRUIT. Complete the pruning, washing and tying of Peaches and Vines in late houses; those for early supplies which have been gently started will require attention in the way of atmospheric moisture, and as they come on, a little more heat; and where this is available a little Tomato, Melon and Cucumber seed may be sown; also Succentrics in pots that have been in a cold frame or house for a week or so may be brought in.

IN-DOOR PLANTS, FLOWERS, &c.—This is a favourable month to generally overhaul and clean this section in readiness for the growing season, and attention will be required for all forced subjects, such as Hyacinths, Narcissus, Spirea, &c.; these, as they begin to move, should be kept as near the glass as possible and attention given as they require it in the way of staking, tying, &c., and as the beginning of the cold liquid and soot water will keep them, care being taken not to overdo this or you will have better foliage than flowers. Where there is a sufficient command of artificial heat many things may be sown this month, but generally it is better to wait a bit as they go away quite early in the periods of sunshine become extended.

VEGETABLE GARDEN. During dry or frosty weather wheel or cart out manure and trench any vacant ground not already done, and where this is not practicable, deep, and leave the surface as rough as possible. I am greatly in favour of ground or stable manure applied pretty liberally when digging at the end of year to old garden soils, as from my experience it gives them a new lease of productivity, and that the more lime you are supposed to have in your soil already the better the results. Towards the end of the month a few Broad Beans should be sown in a sheltered position, also Spinach. Attend to and mature Asparagus beds and cover Sea-kale with pots or straw. I find ordinary bog-mould the best medium for this purpose. Celery will in some cases require protection, that is, with bracken or litter, or Globe Artichokes. Potatoes that have been sown out may be sown in frames or pots for early supplies, and those for successive planting, potted in boxes in a

dark, dry shed, and those for main crops attended to for any decayed tubers, and turned so as to prevent too early a growth. All growing crops should be kept clean of weeds, and the soil, whenever dry, kept stirred between the rows; and Broccoli fit for use will be better lifted and stored; a shed with a north aspect is the best for this purpose, and failing this, heel them in with the heads facing north and protect with whatever material is available.

The Silver Cedar.

CEDRUS ATLANTICA GLAUCA.

A pretty tree at all times, this appears doubly so in winter when the glaucous hue becomes more pronounced. When planted among other dark-leaved conifers the effect is distinctly good, and on dull winter days a well-grown young plant is a pleasant object. There seems to be no difficulty in its cultivation, given a fairly good soil and drainage. There is also a form named *argentea* slightly more silvery than the variety *glauca*. An alleged golden variety of the Atlas Cedar has failed so far to come up to expectations, the leaves only assuming a dull yellowish tinge in winter, giving the impression of bad health rather than anything else.

Strange to say, a similar variation in colour occurs in *Abies pinsapo*, a native of Southern Spain, the Cedar coming from Algeria and Morocco.

Abies pinsapo glauca is quite an ornamental tree when growing well but less silvery than the glaucous form of the Atlas Cedar. Like the yellow form of *Cedrus Atlantica*, *Abies pinsapo aurea* is not worth growing except as a botanical curiosity.

Apart from some varieties of *Cupressus* and *Thuja* the only golden conifer of any merit is the golden Scotch Pine, *Pinus sylvestris aurea*. This assumes a really good colour in winter, and shows up well among the dark-leaved species.

B.

By Sed-el-Bahr.

By PATRICK MACGILL.

Above your graves no wattle blooms,
Nor flowers from English dells,
You, men, who sleep uneasily
Beside the Dardanelles.

To other lands your mates have sped
Fresh fields of war to find
Oh! little graves on Sed-el-Bahr,
And dead men left behind!

'Twas yours to know the surge of war
And yours to pay the cost,
'Twas yours to battle for a cause,
And dying, know it lost.

What drums upon the narrow seas
That run by Sed-el-Bahr?
Oh! get you up to see once more,
A British man-of-war!

The sailor, lying on the deck
A tale of conquest tells,
The cause is won! Sleep easily
Beside the Dardanelles!

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Irish Gardening

Contents

	PAGE		PAGE
Hardy Herbaceous Plants (Illustrated)	17	Notes-- <i>continued</i>	
Herbaceous Plants which will grow in Shade	18	Lithospermum rosmarinifolium	23
Rhododendron ciliicalyx (Illustrated)	18	The Gromwells	23
Hellebores : Christmas and Lenten Roses	19	Moltkia petraea	23
The Garden in November	20	The Loganberry	24
Vegetable Notes	22	Correspondence	24
Early Peas	22	Amateur Fern Growing	25
Notes—		The Future of Fruit Growing	29
Prunus Pissardii (Illustrated)	23	Allotment Notes	30
The Oso Berry	23	The Month's Work—	
Alnus incana ramulis coccineis	23	Southern and Western Counties	31
		Midland and Northern Counties	32
		Rainfall in 1918	32



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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

VOLUME XIV
No. 156

FEBRUARY
1919

EDITOR J. W. BESANT

Hardy Herbaceous Plants.



WITH the advent of February it will be necessary to give attention to herbaceous plants, where this work was not attended to in autumn. In some soils the work of lifting and dividing is better done in spring, in heavy, damp soils, for instance. In such soils the plants usually flourish and grow strong and continue growing late in autumn; but heavy soils are difficult to work after the autumn rains, and soon get cold. To lift and divide plants in late autumn or early winter and replant them in cold soil is not advisable, as many of the roots perish ere new growth begins in spring. Where the soil is porous and well drained, autumn planting is preferable, as most herbaceous plants make fresh roots in autumn, and these have time to get hold of the soil ere it becomes too cold, and are in a much better state to begin work in spring.

Spring planting, however, has advantages, but should not be delayed too long, otherwise the drying winds of March will prove severe on newly-planted stuff.

Since the first year of the war tender plants have fallen into disfavour owing to the amount of labour involved in their production, and it is possible that it may be some time before they are again cultivated to the same extent, if ever they are.

Every year people are realising more and more that hardy perennials, hardy annuals and annuals, which can be raised with no other protection than a cold frame, give even more satisfaction than tender exotics out of doors. Moreover, herbaceous plants are now so numerous that kinds to suit every garden may be found without difficulty. For the large garden all are available, for the small garden the dwarfier kinds may be selected, and for economy they may be limited to those that not only look well in the garden, but may also be cut for the decoration of the rooms. The low growing, trailing

kinds may be used as edgings to walks, and are particularly useful where the line between path and border is of stones. In a large garden, well-mown grass makes a beautiful setting for herbaceous plants, but it involves a good deal of labour in mowing, and it is essential to keep down unnecessary labour as far as possible. Stones are effective in holding back the soil, and cease to be unsightly when clothed with trailing plants and others of low growing habit. It must not be thought that hardy herbaceous plants will grow successfully without proper attention to the preparation of the soil.

Most people, however little they know of gardening, are ready to allow that digging and manuring are absolutely necessary to grow good Potatoes and Cabbages. The same may be said for herbaceous plants, and with greater force, for while the Potatoes and Cabbages are but a few months in the soil, the herbaceous plants are required to remain on duty for years; hence the need for thorough preparation at the outset.

If a new border is being planted or an old one wholly replanted, trench the soil at least two feet deep, placing at the bottom of the trench any rubbish of leaves and any other garden residue available; but good manure, if at hand, should be kept under the top spit, say about twelve inches below the surface. Some may say that it is all very well to talk about manure for flowers, but there is little of it nowadays. What there is we want for vegetables and fruit.

If manure is not procurable for flowers, deep cultivation of the soil before planting and constant surface cultivation with the hoe afterwards will do a good deal to ensure a display, but it is just as well to recognise the fact that without occasional manuring the best results will not be maintained year after year. We may take it for granted, however, that those who determine to grow hardy plants will find ways and means of keeping their treasures in health.

As mentioned above, there is an abundant choice of material, and the owner of a large

garden and ample means may grow the best of every kind, tall, medium, and dwarf. Where, however, space is limited and means restricted, it will be necessary to select those plants of medium height which are also useful for cutting and dwarfier sorts for edging.

The following is a list of useful plants of medium height, say from 2 to 4 feet:—

Achillea ptarmica Perry's Variety, *Alstroemeria aurantiaca*, *Anemone japonica*, both pink and pure white varieties; *Aquilegia* of various colours and with long spurs; *Aster* (Michaelmas Daisies) *Desire*, *elegans*, *acris*, *viminalis*, *Freedom*, &c., small-flowered varieties forming lovely sprays; *A. amellus roseus*, *A. amellus Beauty of Ronsdorff*, *A. amellus Chas. Davis*, *A. amellus Fleuve Bleu*, &c.; *Campanula latifolia*, *Campanula persicifolia* Moerheimii, *Campanula persicifolia*, Newry Giant; *Catananche coerulea*, *Chrysanthemum maximum*, Mrs. J. Tersteeg, and Mrs. Chas. Lowthian Bell, *Delphinium Belladonna* and its double variety, *Delphinium Persimmon*, D. Mrs. Thompson, *Doronicum plantagineum excelsum*, useful for early flowering; *Eryngium planum* and *E. Oliverianum*, pretty species of Sea Holly, *Gypsophila paniculata* and its double variety so useful for cutting; *Helenium autumnale pumilum*, a dwarf and free flowering Sneezeweed; *Heimerocallis flava*, a pretty Day Lily; *Inula glandulosa*, with large yellow flowers; *Iris germanica Kharput*, *Iris florentina*, *Iris Iris King*, I. Mrs. Darwin, I. *Jacquiniina*, I. *Black Prince*, I. *Graculus*, I. *pallida Her Majesty*, I. p. *Edouard Michel* and I. p. *Queen of May*.

Kniphofia corallina, *Kniphofia rufa*, and *Kniphofia MacOwani* are pretty dwarf " Torch Lilies."

Lupinus polyphyllus blue, pink and white, are valuable in early summer, as also is the double variety of *Lychnis Alba*, while the scarlet *Lychnis chalcidonica* is one of the most brilliant flowers in the garden; *Lychnis coronaria*, the Crown Champion, is useful in forming a bright patch of colour. *Monarda didyma*, the " Bergamot " is a beautiful plant in moist soil, while the varieties of *Paeonies* are endless, and all of great beauty. *Phloxes* provide some of the finest effects possible in autumn, while in early summer *Pyrethrums* are delightful in pink, white, red, and yellow, and both single and double varieties are available. *Rudbeckia speciosa* is a charming plant, as also is *Salvia nemorosa*, *Sidalcea Candida*, white, and *S. Rosy Gem* are effective, and *Solidago Gattereri* is useful in autumn.

The hybrid *Verbasums*, *Caledonia*, A. M. Burnie, *Cupreum*, *Lewanika*, and *densiflorum* are all in the first rank of herbaceous plants, as also are *Veronica longifolia* and *V. virginica*.

Scabiosa caucasica Perfecta is useful alike in the garden and for cutting, as also are the *Hencheras*, of which there are many varieties, pink, red and white.

Herbaceous Plants which will grow in Shade.

OCCASIONALLY we are asked if there is anything that will grow in a shaded garden.

If the soil is fairly good, or if it can be made so, there are many herbaceous plants that will do quite well. Assuming that some trouble is taken in digging and cultivating the soil and adequate attention given the plants subsequently, the following will succeed:—*Ajuga reptans variegata*, a pretty trailing plant useful for margins.

Anemone blanda and *apennina*, flowering in spring, and *A. japonica*, flowering in autumn; also the fine varieties of *Anemone nemorosa*, *Campanula latifolia*, and the fine forms of *Campanula persicifolia*, the double *Cardamine pratensis*, *Corydalis bracteata* and *Corydalis lutea*, *Dicentra spectabilis*, *Doronicum plantagineum*, *Epimedium macranthum*, *Funkia lanceifolia*, *F. Sieboldiana*, *Gentiana asclepiadea*, *Christmas* and *Lenten Roses*, *Iris sibirica* and varieties, *Lysimachia vulgaris*, *Mertensia pulmonarioides*, *Phloxes*, *Primula japonica*, *P. pulverulenta*, *Pulmonaria arvensis*, *Ranunculus aconitifolius*, *Trillium grandiflorum*, and many fine varieties of *Trollius*.

Rhododendron cilicalyx.

THIS beautiful half-hardy *Rhododendron* was first introduced by the French Missionary Abbé Delavay. He forwarded seeds collected in the Yunnan district of China to the Paris Jardin des Plantes. One of the seedlings raised was sent to Kew in 1892. When 3 feet high the plant flowered in May, 1900, and was figured for the Botanical Magazine tab. 7782. Since that date it has grown to a shapely specimen planted out in the Himalayan section of the Temperate House, and is now 8 feet to 9 feet in height.

In recent years Mr. George Forrest records finding masses of fine plants, 6 feet to 8 feet high, on the hills surrounding the Tengyueh Valley and in dry, rocky situations on the eastern flank of the Tali Range, Western Yunnan. Forrest's numbers 1159 and 7516 were collected at 10,000 to 11,000 feet elevation. This is several thousand feet higher than collected by the Abbé Delavay, but probably not sufficient for the plants to be grown outside unless in the favoured parts of the south and west.

R. cilicalyx is closely allied to the Himalayan species *R. formosum*. Botanically it

differs in the bristle-like cilia on the calyx. In habit the Chinese plant, at least as collected by the Abbé Delavay, is more robust, making a better shaped specimen and having rather larger flowers than *R. formosum*. This, however, as cultivated in our greenhouses, is a very variable plant, some of the extreme forms approaching *R. cilicalyx* in habit, size of leaf

ful grower in its cultivation. The usual *Rhododendron* mixture of fibrous, sandy loam, peat and leaf-mould being suitable. Though protection in winter is necessary, a degree or two of frost does no harm. Specimens cultivated in large pots or tubs benefit by being stood outside after flowering until late autumn, selecting a western aspect for preference. A. O., Kew.



CHRYSANTHEMUM MAXIMUM ETOILE D'ANVERS

and flowers. Whether Mr. Forrest's plants will prove as variable and provide a connecting link remains to be seen.

The flowers of *R. cilicalyx* are borne three to five or six in a truss, occasionally more, 4 inches in diameter, white, with a rich yellow blotch inside and the exterior flushed with rose. It is deliciously fragrant.

R. cilicalyx presents no problems to the care-

Hellebores.

CHRISTMAS AND LENTEN ROSES.

CALLED by botanists *Helleborus niger*, the Christmas Rose is one of the most charming flowers of winter. Commencing to flower in December out of doors, it will continue in one or other of its varieties well on into January.

When freely exposed, the flowers develop a slight tinge of pink on the outside of the petals, but when given even the protection of an ordinary hand light they are pure white, and the stems much longer. There are several varieties rather better than the type, notably *H. n. albifolius*, with extra large flowers; *angustifolius*, producing pure white flowers on tall stems; *scoticus* with large, pure white flowers; and quite a number of fine seedlings, many of them raised in Ireland by enthusiasts of other days.

In addition to the forms and varieties of the Christmas Rose there are numerous other species of *Helleborus*, valuable for flowering in winter and early spring.

Just at present—mid-January—*H. lividus* is attractive with its clusters of green flowers borne at the ends of the long, almost woody, stems which also bear, just below the flowers, a whorl of glaucous, trifoliate, toothed leaves. This plant may be found in gardens under various names, such as *H. corsicus*, *H. trifoliatulus*, and *H. argutifolius*; but the correct name appears to be *H. lividus*. It is a native of Corsica, and I have lately seen a fine mass of it in Miss Geoghegan's garden at Stillorgao, which was raised from seeds collected by the lady herself in Corsica.

Very interesting, too, is the little *H. viridis* and its varieties, mostly with flowers of a delicate shade of green relieved by the tuff of lighter-coloured anthers in the centre of each.

H. odoratus, also with greenish flowers, is now opening, but the scent is not very highly developed. *H. guttatus* has white flowers with red spots, and is quite an attractive species. Probably from this plant crossed with *orientalis* or some other early flowerer came the numerous spotted hybrids of continental origin.

Of species with deep crimson, purple and red flowers there are *H. abschasicus*, *H. atro rubens*, *H. colehiensis* and its varieties, *H. olympicus* and *H. orientalis*.

There is in the Botanic Gardens at Glasnevin a good collection of species, varieties and hybrids, and among un-named seedlings is one of a distinctly yellow shade, with large flowers on tall stems.

For planting in shrubberies and by woodland walks the *Hellebores* are invaluable. They enjoy shade in summer, and like a rather heavy, moist soil. Commencing to flower at the end of November or early December, they continue well into March if a good selection be grown. The Christmas Roses are best for cutting, lasting well in water, but the coloured varieties are not so satisfactory in this respect, and look best when growing on the plant. Those who have to furnish shaded gardens or parts of gardens will find the *Hellebores* of great assistance. B.

The Garden in November.

THE paper under this heading is both interesting and timely. If I venture to supplement it by naming a few species which are not referred to by J. W. B. it is because they are of high decorative merit in the winter months. No one, fortunately, can cultivate all the beautiful things that may be grown in the climate of our islands; but the very abundance of choice ought to preserve us more than it does from monotony in shrubberies, that being the sin that doth most easily beset gardeners and amateurs.

First, then, let me name four species in a genus not noticed by J. W. B.—namely, *Olearia macrodonta*, *ilicifolia*, *nitida* and *nummularifolia*—which may surely be reckoned hardy in all parts of Ireland, as *O. Haasti* is everywhere. The grey, sculptured foliage of the first two, the shining green of *O. nitida*, and the dense, imbricated leafage of *O. nummularifolia* are enough to entitle them to rank among the choicest evergreens, leaving out of account the profusion of white blossom which covers them in summer. Another grey-leaved shrub of humbler stature is *Senecio Grayi*, from the north Island of New Zealand, a better thing than *S. laxifolius*, from the south Island (which is apt to be supplied as *S. Grayi*), though not quite as hardy. Another species of *Grandisela*, *S. Buchanani*, contrasts well with *S. Grayi*, having fine, spoon-shaped leaves of bronzy-green with russet backs. I have not yet induced this species to flower; but *S. Grayi* bears profuse panicles of clear yellow flowers in summer. *Eleagnus macrophylla*, the backs of its leaves washed with refined silver, is well worth plenty of room for its free growth.

For the lighter, brighter shades of green there is ample choice among *Griselinia littoralis*, *Choysia ternata*, and the Californian Mountain Laurel, which has lately been bereft of the musical title of *Oreodaphne* and dubbed discordantly *Umbellularia*. This trio is for mild districts; but *Fatsia Japonica* is hardy even in London parks, and, strange to say, its great palmate leaves stand buffeting by wind to a degree one would not expect them to do.

As for richer hues of green, there is nothing, except the holly, among our native evergreens, and few among exotic shrubs, to excel *Arbutus Unedo*, full of flower through the winter. The North American *A. Menziesii* and the European *A. Andraebne* surpass the native species in the beauty of polished limbs of cinnamon colour; but, unfortunately, they fail to bear fruit in our country. Of lowlier, slower growth is the Japanese Anise Tree, *Illicium religio-*

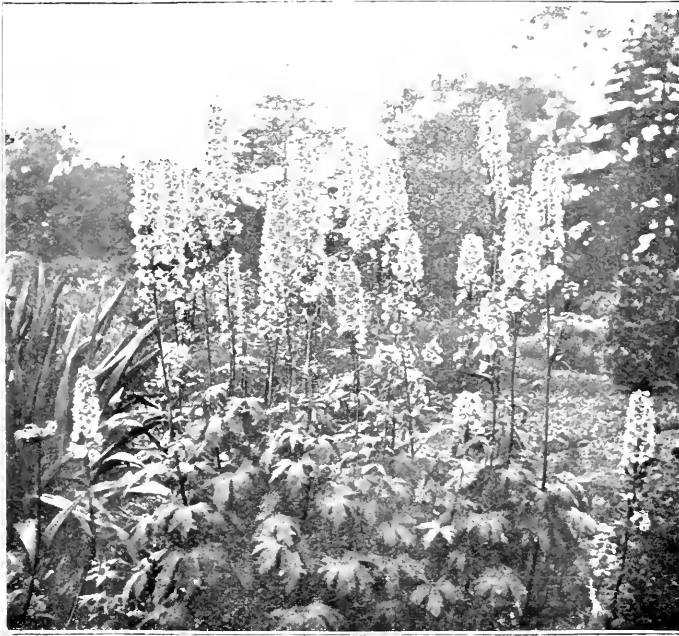
sun, which puts forth its flowers, tinted like old ivory, in spring. It is a shrub most rarely seen in British gardens, but one that I hold in very high esteem.

Then for sombre green, has J. W. B. no encomium for *Garrya elliptica*, draped with its grey male catkins? One usually sees it trained against a wall, where it is too apt to get untimely pruning, whereby it is debarred from flowering. But it grows well in the open without protection: witness a fine specimen in the Edinburgh Botanic Garden, where winter is no slight ordeal to sensitive things. *Tricuspidaria*

the deciduous *B. virescens*, which atones amply for its dingy summer bloom by the brilliant burnt-sienna of its arching stems when bare of leaves.

Perhaps the prettiest of all shrubs in winter is *Pieris japonica*, which prepares its flower clusters months before the flowering season, setting them in rosettes of carmine-tinted racemes at the end of almost every shoot. And when these buds burst into ivory bloom in April it is hard to find anything fairer.

About mid-winter, when strolling through the Edinburgh Botanic Gardens, I caught sight of



FINE GROUP OF DELPHINIUMS

lanceolata and *Eucryphia cordifolia* have fine dark foliage; but they only thrive in mild quarters.

Among rhododendrons, J. W. B. mentions *R. Falconeri* as "a gem for the warmer counties" (it flowers in the open in Edinburgh); it may be well to add that where it does not succeed, *R. Hodgsoni* flinches not from any cold it has to face in these islands, and its foliage is quite as grand as that of the other. Two species of *Barberry* are conspicuously desirable for winter effect—viz., the evergreen *B. japonica*, bearing among its huge armoured leaves clustered racemes of fragrant lemon-yellow flowers from Christmas onwards, and

a bush covered with drooping, white racemes. There are whites and whites—milk white, snow white, marble white, and so on. The flowers of this bush are of a peculiar gleaming white, the effect being enhanced by the intensely dark, dull green of the foliage. I was puzzled about it. Evidently it was an *Arcto-staphylus*; but which? Mr. Bean describes *A. Manzanita* as blooming in March and April, the flowers being deep pink. Howbeit, it turns out that this is a white-flowered *Manzanita*, and a most lovely thing it is. It is growing at the foot of a wall, but not trained against it.

Monreith.

HERBERT MAXWELL.

Vegetable Notes.

PARSNIPS.

ONE of the earliest crops to be sown is usually the Parsnip, and an effort is generally made to get the seed in some time in February. It is doubtless a good practice to sow thus early, providing the weather is favourable and the soil in suitable condition.

However, rather than attempt to sow while the ground is wet, it will be better to delay even into March, and it is a very open question whether a March sowing is not equal in every way to a February one even under the best conditions. Let the soil be ever so dry, there is very little heat in it so early in the year and germination is slow; also, if bad weather supervenes after sowing, as it often does, a good many blanks will be found in the lines some weeks later. By the first week in March there is considerably more sun heat, and the surface soil warms up a good deal during a sunny day. There is moisture enough in the soil at that time, and the seeds invariably germinate more quickly and more evenly than those of the February sowing unless the weather conditions during February have been unusually favourable.

The Parsnip requires a long growing season, but it will have quite a long enough season if it grows from March till October.

Those who cannot see any prospect of getting the seed in in February need not worry, for it will be time enough if sown by the middle of March. A good many allotment holders who have been unable to get on to their plots during the short winter days are getting uneasy about the amount of digging still in front of them, but they will soon work up arrears now, and should begin by preparing the ground required first for such crops as early Peas and Parsnips. Fortunately, no manure is required for the latter, and, therefore, the digging may proceed at once. The soil should be well turned to the full depth of the spade, broken finely, and then left until sowing time. Before sowing lightly firm the surface by treading it closely all over; then with the rake make the surface as level and fine as possible. Many failures are due to sowing too deeply. Parsnip seed should be covered quite lightly, but after sowing it should be firmed by lightly pressing with the back of the spade or even with one's foot. Make the lines at least fifteen inches apart, and sow four or five seeds together at intervals of one foot, thinning out to one when sufficiently advanced to note which are the strongest seedlings. As the young plants grow keep the hoe going between the lines as long as possible; this encourages growth by keeping the soil moist below and also keeps down weeds.

B.

Early Peas.

Most people who have a garden or allotment aspire to have a dish of peas as early as possible, and a fair amount of healthy rivalry exists among plottolders as to who will pick the first dish.

With Peas, as with any other plant, soil and situation play an important part, and a fairly light, warm soil in a sunny position will produce an earlier crop than a heavy, cold soil with a less favourable aspect.

The middle of February is looked upon as a suitable time to sow Peas, and for long the time-honoured Sangster's No. 1 held the field as a first early, and it is still one of the best owing to its hardness.

For this early sowing the soil must be well dug and, according to whether it be rich or poor, should have a fair dressing of manure. There is not the same need for heavy manuring at this early date as later on. The manure has two uses—viz., to provide food material and to retain moisture. Early in the year there is an adequate supply of moisture, but later in the summer dry spells are frequent, and it is then that the well-manured ground shows up. Before the hot weather arrives our early Peas will be nearly over, so that excessively heavy manuring is not necessary for the early crop. It is common nowadays to advocate opening shallow trenches for Peas, and the practice is a good one for mid-season and late varieties which have to come through the hot days. Trenches allow of a larger quantity of manure being placed within easy reach of the roots, but for the reasons stated above there is not the same necessity for this earlier in the year. It will be quite sufficient to dig the manure into the ground and draw drills in the usual way, but flattening out the bottom so that the seeds when sown may be scattered and will not all run to the bottom of the drill, usually V-shaped, and lie close together.

The drills should be about four inches deep, and when the soil is filled in press it gently with the foot and rake level.

If a variety such as Sangster's is sown place the stakes in position early. Dwarf varieties need not be staked, but, as well as the taller ones, should have some soil drawn up to them on each side of the row as soon as they are a couple of inches high, and a second earthing up later will help to keep them erect. Varieties are numerous nowadays, and every seedsman has a wide selection.

Of varieties growing 3 to 4 feet high, Sangster's No. 1, The Pilot, Gradus, William the First, are good, while dwarfs are Excelsior, 15 inches, and William Hurst a foot or so.

Notes.

Prunus Pissardii.

THIS is the commonest name of a pretty early flowering tree which should properly be called *Prunus cerasifera atropurpurea*. There seems little likelihood of the popular name being discarded at present, and so we retain it at the head of this note.

It is one of the earliest of the plums to come into flower, and our illustration is of a fine specimen which flowered in February, 1918, in the grounds of Roebuck Castle, the residence of Mr. Westby.

Few of our flowering trees give a greater wealth of bloom in a good season and few have greater claims on the attention of planters. The leaves, appearing just when the flowers are fading, become a rich bronze colour, and even without the flowers provide an effective bit of colour throughout the summer and autumn. This small tree may be put to good use when planting for colour effect is carried out: a group, in contrast with green-leaved trees, is always effective, while there is the additional charm of the flowers in early spring. X.

The Oso Berry.

NUTTALLIA CERASIFORMIS.

THIS interesting early flowering shrub is a native of California, and was introduced in 1848, and grows to a height of 8 feet or more, producing numerous branches from the base. The flowers, borne on the leafless twigs, are produced in short racemes, are pure white, and have a faint hawthorn-like scent.

The male and female flowers are usually produced on separate plants, the latter being the more floriferous. When plants of different sexes are grouped together fruits are produced; the fruits are something like very small damsons, at first red, then turning purple. One bush in the Botanic Gardens at Glasnevin, far removed from any other, occasionally bears fruits. When the flowers are just opening, longish shoots cut and brought into a room make a useful winter decoration when arranged with some evergreens such as "Mahonia."

J. W. B.

Alnus incana ramulis coccineis.

THIS is an excellent tree to plant for winter effect. The young shoots are of a warm, reddish colour, and if not quite so conspicuous at a distance as some of the willows, it is nevertheless quite attractive when suitably placed.

Just at present it is well furnished with the male catkins, which are of the same colour as the young shoots and, dangling from the branches, give the whole tree a most picturesque appearance.

Lithospermum rosmarinifolium.

THE note on *Lithospermum* (page 178) does not do full justice to this plant, which is much hardier than supposed, and if planted on a sunny rockwork, with perfect drainage and protected by a piece of glass from excessive rain, is the most free flowering and attractive rock plant in the month of November, when no other plant of its type is in perfection.

As, however, it is liable to die off in severe winters, it should be propagated by cuttings, and the plants renewed when they become large.

It has also the virtue of growing on soil which contains too much lime for *L. prostratum*.

H. J. ELWES.

Colesborne.

The Gromwells.

IN "Alpine's" note upon the charming genus *Lithospermum* (page 178) he draws a distinction between *Moltkia petraea* and *Lithospermum rosmarinifolium*, which I have hitherto followed Mr. G. Weathers in regarding as synonyms for a single species. I should be grateful for information whether authorities differ on this point. We have grown *Moltkia petraea* on a retaining wall for many years. It is one of the loveliest of Gromwells, more compact than *L. graminifolium*, but equally profuse in bloom.

Momeith.

HERBERT MAXWELL.

Moltkia petraea.

MOLTZIA petraea is quite distinct from *Lithospermum rosmarinifolium*. Botanically they differ, inasmuch as *Moltkia* has exserted stamens—that is, they are longer than the corolla, while in *Lithospermum* they are included, or shorter than the corolla.

Moltkia petraea forms a woody, low shrub, with narrow leaves densely furnished with forward pointing hairs on both surfaces, giving the plant a grey appearance, while the flowers, produced in clusters at the ends of the young shoots, are small and of a light blue colour.

L. rosmarinifolium has broader leaves, less hairy, while the flowers are large and open, of a deeper blue, and borne in fewer flowered clusters, and solitary flowers are often produced in the axils of the leaves below the point.

Moltkia petraea is figured in the *Botanical Magazine*, t. 5942, and *L. rosmarinifolium* in *Flora Italiana*, page 329.



ERIGERON QUAKERESS
Pale Lavender Blue.

The Loganberry.

THERE seems every justification for urging a more extensive cultivation of this useful and hardy fruit. It rarely fails to crop freely, and though not so sweet as the Raspberry it is nevertheless excellent stewed or as a preserve. An additional merit is that the fruiting season is a comparatively long one, in fact, it will extend from July well into autumn. Owing to the long shoots made annually a fair amount of space is required where a large number of plants are grown. On the other hand, this fact is an advantage, inasmuch as where space is limited only one or two plants need be grown, and they will provide many pickings for stewing, if not enough for preserving. Further, though the crop will ripen earlier in a sunny position, shade is not detrimental, and quite good crops are obtained from plants growing in shaded positions. Any good garden soil will grow Loganberries very well, but it is an advantage to give a forkful or two of manure to each plant in spring, merely drawing aside a little of the surface soil, laying on the manure and replacing the soil on top of it.

Suburban dwellers with the conventional back garden may safely plant Loganberries round the walls, and owners of small gardens in the country districts would find them useful in providing fresh fruit for a long time. When the fruit is over, cut out the old canes and tie up the new ones.

GROWER.

Correspondence.

FASTIGIATE TREES.

SIR,—Will you allow me, in supplement to the most interesting article on fastigate trees, which came from the pen of my learned friend, Dr. Henry, and adorned your November issue, to add the following:—

At Kew in the birch collection there is a charming fastigate form of that lovely tree *Betula Ermani*. Of all the treasures accumulated in Sir George Holford's arboretum at Westonbirt, Co. Glos., I should be inclined to give first prize to a specimen of the type, which displays its pale, coffee, cream-coloured stem to such advantage among the dark conifers which form its back ground.

Again, in the riverside nursery at Kew, and therefore not yet revealed to the public, I noticed lately a markedly fastigate form of *Gleditsia triacanthos*, which I was informed had been acquired from that excellent nurseryman, Monsieur Léon Chenault of Orléans.

I hope I shall not be thought egotistic if I mention that I also have two fastigate trees which are not recorded by Dr. Henry. They are a common Lime and a Tulip Tree. (I hate employing the botanic name *Liriodendron tulipifera*, on account of the atrocious false concord to which learned [?] men have given currency.) Of these, the latter is particularly attractive, and its narrow, rigid growth makes it a welcome addition to the shrubbery, where it makes a brave show and takes up little room.

Turning to another matter, I notice in your leading article by J. W. B., in your December issue, which I have just received, that he does not seem over-confident as to the hardiness of *Osmanthus armatus*. He need be under no uneasiness; several examples of this plant have been growing uninjured at Aldenham for ten or more years.—Yours, &c.,

VICARY GIBBS.

DEAR SIR,—Some time ago I sent you a photo. of *Prunus pissardii* in full flower on 5th February, 1918, with the suggestion that you should publish it in your February number, as an example and record of the mildness of last winter and early manifestation of spring.

I have seen *to-day* the same tree a sheet of bloom, similar to that depicted in the photo. of February 5th. On near examination it is seen that there are numerous buds still to come out, but it may be said to be in full bloom. The lady of the house tells me that on the 31st December this winter she picked some sprays with flowers fully open.

It would be interesting to record these facts with the photo. in the February number.—Yours faithfully,
HENRY G. DRURY.

Amateur Fern Growing.

By H. D.

(Continued).

We have already stored up the materials for the soil, or "compost," as the gardeners call it, in which the ferns are to grow, and have taken care that it shall be lime-free. At the same time, it will soon be found that some ferns not only do not object to lime, but actually luxuriate in it. We should therefore have a heap of *old* lime rubbish stored somewhere well away from our main supplies of soil, also a few limestone rocks for special places. It is thus easy to supply lime where needed, but impossible to get rid of it once in the soil, hence the necessity of keeping it out of our main supply.

To prepare the compost.—With a sharp spade cut down through the whole face of one end of the heap of loam sods, previously built up into an oblong rectangular heap, a slice about 3 inches thick. By this means we get samples of all the sods, some of which may be more loamy, some more fibrous or more sandy than others, the bits cut off are now broken by hand into lumps about the size of a walnut, and any worm, beetle or grub seen is taken out and destroyed. The same procedure is then adopted with the heap of peat sods, and the same with the heap of leaf mould. It is now seen why we advised the building of the sods carefully, a proper mixture thus is obtained, and there is no waste.

The mixture of the compost is as follows:—Two parts (say 2 buckets-full) of loam, one of peat, one of leaf-mould, and one of sand, are all put together and thoroughly mixed together by being turned over and over several times with a spade. This is used for the general soil of the rockery, and will suit nearly all ferns. Some few ferns require a special soil: this is easily arranged afterwards by digging out the soil from a "pocket" and replacing it with the special mixture. For instance, Maidenhair ferns (*Adiantums*) will be found to do better without peat, so a special mixture of loam two parts, leaf-mould one part, sand one part, is made with which to replace that already in the pocket: once having a good start in that, the roots will roam farther afield, and select the parts of the general compost they most appreciate.

Again, Harts-tongue ferns (*Scelopendriums*) like lime, broken and pulverised oyster shells for choice, or if they are not obtainable, lime rubbish. For these therefore we will select the lower tiers of the rock-work, so that the limewater from them will run away at once and not percolate into the soil of other ferns, which may hate lime. All that is needed here is to dig out a pocket, and add to the soil one part of broken oyster shells—that is one-fifth of the whole amount of compost.

The Spleenworts are a delightful family of ferns, and for the most part, dainty and delicate. A special end of the rockery, or, better still, a special rock work for themselves in one corner of the house, will be found the most satisfactory. Many of them are very hard to grow at all in a greenhouse with other ferns. Their foliage abhors moisture lying on it, or indeed even the moist stagnant atmosphere of the house which other ferns luxuriate in. Their natural habitat is old

walls, ruins, rock fissures, where they can get free air about them and plenty of moisture for their roots, which wander far through the old mortar and decaying vegetation of their home. These are the most difficult conditions to obtain indoors, consequently many of the rarer and more delicate ones "damp off" and disappear. The common Wall-rue (*Asplenium ruta muraria*), for instance, has defied our endeavours to keep it alive more than two seasons. *Ceterach officinarum*, which enjoys the same conditions as the spleenworts, soon pines and disappears in captivity. These may be grown under glass in pots, but we are dealing here with rock-work, and unless specially provided for, it will be found extremely difficult to grow them. For these the special rock-work should be made in the most airy part of the house—say in one front corner, where ventilation could be obtained at each side. The rock-work should simulate an old ruin, built up of old bricks and slabs of sandstone, leaving a little more space between them than is usual in a proper building. Instead of red mortar, a quantity of old mortar should be well broken and pulverized and sifted through a coarse sieve: to two parts of this, is added one part of well rubbed-up peat and one part of leaf-mould, the whole thoroughly mixed and then wetted till it gets the consistence of ordinary mortar, and is used like mortar for building up the "ruin." If the plants are available they can be inserted between the bricks as the building progresses, and in doing so you cannot put them in too firmly or press the



THE DOUBLE WHITE ROCKET HESPERIS MATRONALIS FL. PL.

"mortar" too closely about the roots. The whole thing is watered from above, so that moisture trickles through and permeates the structure completely, but never stagnates and gets too wet. Then with air circulating about them from the adjacent ventilators, they will luxuriate and show a beauty never seen in pot-grown plants, nor indeed in any other way.

At one end of the main rockery it may be desired to form a cave, at the furthest back and darkest corner—this, for the growth of Killarney and other filmy ferns. If so, do not make the mistake of having it too low down. Build a breastwork up from the floor 18 inches or 2 feet with rough stones and old bricks, filling the interstices with very wet general compost, spores of other ferns will soon settle on this and cover it with beautiful verdure; fill the space behind up to within a few inches of the top of the breastwork with stones, broken crocks, &c., then a thin layer of fine cinders, and next a layer of peat. Then get a large sod of peat, or better, some of the outer fibrous husks of coconuts, if they can be obtained; sink them in a tub of water by tying on a brick, and leave them there for a week, at least, till they are thoroughly soaked through, then get the rhizomes of Killarney fern, pin them down close to the fibre with wire (or hairpins) and lay them on the peat bed, filling the spaces between the sods or husks with lumps of peat. Syringe the whole two or three times a week. The roof of the cave should be about 2 feet to 2½ feet above the breastwork in front. The ferns then can be seen and attended to without much stooping, and no further protection or closing in is needed. If sandstone sides and roof can be provided, the rhizomes will soon creep all over it.

Nothing now remains but to select and plant our ferns, and our future success will largely depend on the care with which we have made all the preceding preparations for their reception. We are apt to be in too great a hurry to get our plants and have them growing, but it will be found that the employment and interest entailed in providing for them will be a great and real joy, and the after care of them will be carried on with the greater zest.

In selecting our plants we would suggest that, at first at least, none but evergreen forms are chosen. If this advice is taken, we think it will not be regretted. The appearance of the house during the long winter months, bright and brilliantly clothed throughout with graceful forms in all shades of green, will excite wonder and admiration, far beyond that which will be given to it in summer.

It is true that the exclusion of deciduous forms will deprive us of many very beautiful things; but then their time of beauty is soon succeeded by a period of decay, and then a longer period in which they are entirely lacking of interest. The space they occupied in all their glory is now vacant and unsightly, and nothing can be done in the meantime to improve it. There are plenty of others one would then like to have in their places, but we remember what they were, and think of what they will be, so cannot bear to root them up, and so endure them still longer.

Again, avoid introducing the common forms of our larger growing native ferns; they are easy to obtain, so the temptation is great to gather them ourselves and rapidly furnish our

house. Later on you may find an odd corner to be filled up where you may place one, but it will be soon found that space is too precious, and that we have no room for them.

Also be content with one specimen of each kind, thus you will become familiar with a large range of varieties, though you may not have great space at your disposal.

When planting, intersperse those with light feathery foliage amongst those with heavy foliage, the effect will be much better; also, as mentioned before, select small and low-growing forms for the lower spaces in the rockery, the larger-growing ones being reserved for the higher places, otherwise the smaller kinds will be smothered and obscured from sight. This makes it unnecessary, and indeed inadvisable, to have the slope of the rockery steep; the lower the back part can be kept the better, as the higher the ferns are the less is their beauty seen. If you have the opportunity, visit a nursery where ferns are made a special feature, make a note of the type of growth of the various forms, both as to size and density of the foliage, for the plants you buy will probably be quite small, but may grow to a very large size in a couple of years. For instance, the Royal Fern (*Osmunda regalis*) may be bought in a small "thumb pot," but unless you have almost unlimited room, it is quite unsuited for your rockery, beautiful though it is. It will grow to such an immense size that it will overshadow everything within a couple of yards of its centre, and not only so, but its roots will spread so far that they will rob and kill every plant even further away; then, if you decide to remove it, you will find a hard day's job before you, and will have pulled down a large part of the rockery before your object is accomplished.

We will now indicate some ferns suitable for an unheated fernery, with a rockery. We say advisedly for a rockery, for we are conscious that some will survive a frost there that would perish in pots. Pots will be penetrated by frost, when they are standing on shelves, that would not reach the roots in the rockery. Here they are protected by the foliage covering the whole mound, by the large mass of soil, and by the rocks themselves under which the roots lie far out of its reach. All the ferns we select will be evergreen forms, and will be roughly classified as to their habit of growth into low, medium and tall. Many others will remain that may be tried when more experience is gained, but a sufficient number will be here given to make a good start, and all have been tried under the conditions laid down.

LOW GROWING FORMS.

Adiantum capillus veneris, *Asplenium fontanum*, *A. adiantum nigrum*, *A. lanceolatum*, *A. marinum*, *A. ruta muraria*, *A. septentrionale*, *A. trichomanes nigrum*, *A. t. viride*, *A. flabellifolium*, *Blechnum spicant*, *Camposorus rhizophyllum*, *Ceterach officinarum*, *Cystopteris fragilis* (this, though deciduous, is included, as under glass it is almost evergreen, and is invaluable, as its dainty seedlings appear everywhere); *Davallia bullata* (good for the wall); *Doodia aspera*, *D. caudata*, *Gymnogramma triangularis*, *Hymenophyllum lambridgeense* (for cave); *Lomaria alpina*, *Polypodium dryopteris*, *P. phegopteris*, *P. calcareum* (these also are deciduous, but are included as they will suit the wall and

will creep about the rock work, so need not leave bare spaces): *P. vulgare*, *P. v. Canabrium* (also good for wall).

MEDIUM FORMS.

Adiantum chilense, *A. cuneatum*, *A. Williamsii*, *Asplenium lucidum*, *Allosorus achrostichoides*, *Cyrtidium caryotidum*, *Dictyogramma japonica variegata*, *Lastrea recurva*, *L. montana*, *L. fragrans*, *L. erythrosora*, *Niphobolus lingua*, *Polystichum triangulum laxum*, *P. lonchitis*, *Pteris cretica alba lineata*, *P. serrulata*, *Scelopendrium vulgare*, *S. v. crispum*, *Todia pellucida*, *T. superba*, *Trichomanes radicans* (these three for cave).

TALL FORMS.

Adiantum pedatum, *Cyrtidium falcatum*, *C. fortunei*, *Dicksonia antarctica* (this is a tree fern, and should be planted amongst those of

(*Pteris serrulata*), some very narrow, other broad, plain or tasseled and variegated, are very suitable for this situation. "Hart's-tongues" (*Scelopendrium*) in almost endless variety may be had very cheaply. Polypodys in many varieties will creep about. Maidenhairs, too, will thrive and charm with their fairy leaflets. Many others can be obtained. All should be purchased quite small. Some of the soil is picked away from the roots, then the finger, inserted through the rabbit netting, is moved about to form a space in the soil, the roots are then carefully pushed into this till the crown is just level with the wire, then the finger is inserted a little higher up and soil pushed down on the roots and the space filled up; this second hole is now plugged with some fresh soil, a piece of moss put in, and the planting is done. A few squirts from a syringe just above the level of the plant,



PRUNUS PISSARDII AT ROBECK CASTLE

February, 1918.

medium height, so as to give it head room later): *Lastrea dilatata*, *L. rigida*, *L. aristata*, *L. a. variegata*, *L. opaca*, *L. goldeana*, *Lygodium japonica* (scandens—climber): *Polystichum minutum*, *P. setosum*, *P. angulare*, *P. achrostichoides*, *P. proliferum*, *Pteris crispata*, *P. argyrea*, *Woodwardia radicans* (This splendid fern is almost too large for a modest house. Its fronds shoot up and then bend over till their tips are far below the level of the crown: it should therefore when quite small be planted, the crown pointing down, in the wall: only some of the fronds will arch outwards; they may attain a length of 9 feet. Young plants will form near the tip of each frond).

As the back wall is not prepared for the real cultivation of ferns, but only as a means of furnishing the house, our rule as to growing one of each kind does not hold good for this situation. Many common evergreen kinds can be got to furnish the wall. Numerous "ribbon ferns"

and you may leave it, confident that it will grow.

The plants having been given their chosen places in the rockery should be carefully planted. If they are in small pots they should be watered the evening before planting. Turn the plant out of the pot, and be careful in the subsequent handling not to injure the roots. If the pot is very full of roots, just slightly loosen, or round off, the upper edge of soil where the surface was in contact with the pot: do not disturb or try to pick out the drainage crocks that were at the bottom. If the pot was not very full of roots, this drainage material may be carefully picked out. The ball of roots is then placed in a hole made with the fingers, in the centre of the "pocket" full of compost, which is then filled in around the plant and very firmly pressed in with both hands, one on each side, all round, more compost being added as it is pressed in till it is level, or very slightly higher than the surface that was in the pot. The whole pocket

is given then a thoroughly good soaking with water, and left alone for three or four days, before any more water is given.

On the proper watering of the ferns, a good deal of your success will depend. Never forget the very simple and common-sense fact that when they are actively growing—that is, making and throwing up and developing new fronds, they require much more water than when resting, that is, after the fronds are mature and they simply want to live, and not grow any more. Also, that they require more water in hot weather than in cold weather, and more also in dry weather than in damp or wet weather. So true is this, that my rockery gets *no* water from the beginning of November till the end of January, or if there is frost and hard weather, till the middle or end of February. Some people will hardly credit this, but to my mind it is the most important element in successfully growing ferns in an unheated house, and saving them through the winter. It must not be forgotten that we are dealing here with a rockery and not with pot plants—for them some water is necessary now and then, or they will certainly die, and if just after watering them frost appears, they will likely die, so the position with them is different and difficult. In the rockery, however, the soil never gets, during the three winter months, so dry that the plants will suffer, their roots are tucked away under the stones in damp cool earth, there is little evaporation, and the plants are not actively growing. Extra water at this time will make the soil cold and sour, will induce an over-moisture-laden atmosphere, and damping or mildew of the foliage will be the result; besides, if frost penetrates, it will have a much more serious effect on the wet earth than it would on dry, killing the roots where it penetrated.

The next, perhaps startling, proposition is, do not water your ferns overhead—that is, do not sprinkle or wet the foliage. The only exception to this rule is in the case of filmy ferns (*e.g.*, Killarney fern). These, on the other hand, must be constantly watered over head, so as to keep the fronds damp. Some few ferns make such an abundance of spores, that these and the spore cases when shed cover the foliage with thick brown dust which may be objected to; some of this may be removed with a feather brush, or it may be syringed off in that case a dry airy day, without cold wind, should be selected, the plant or plants syringed, the excess moisture shaken off, the door and ventilators all opened wide, so that free dry air circulates and dries the foliage rapidly. Then the doors and ventilators are closed again, and the still moist atmosphere again maintained. Many people think that the more water you give ferns the better, and that they specially enjoy being syringed. This is not so. They undoubtedly like an unfailing supply of moisture, but not too much of it, and though plenty of rain has no ill effect, but rather the reverse, in their wild habitat, that is because the water is being constantly changed, and as soon as the rain ceases the breeze shakes superfluous moisture off them and evaporation in the open air soon completely dries them. Under glass these conditions do not obtain. Your syringe leaves a superfluity of water in the fronds, for there is no breeze to shake it off, so it soaks into the leaflets and stagnates. The close atmosphere of the glass-house is saturated with moisture, so

there is little or no evaporation, the consequence is that rotting or damping occurs, not perhaps in the most prominent or vigorous fronds, but in those of weaker growth, low and deep in the plant, crowded and shaded by stronger fronds or by those of adjoining plants, and once it starts in the weaker it may soon spread to the stronger; or a mouldy leaflet comes in contact with a fresh strong young frond just starting up, soft and full of sap, it at once becomes infected, the mould penetrates through it, and it falls over destroyed. This is not the only ill-result of over-head watering, for many ferns, though they will not easily "damp," become greatly discoloured, getting black or brown if water lies on them for even a very short time. It is most true of those whose foliage has a rough or dull surface. Those with a shiny surface stand water best as a rule.

The water then must be given to the individual plants, not poured or sprayed promiscuously over the whole lot. It should be given through the pipe of the watering pot without any "rose" on it, and given carefully so as not to wash the soil away from the plant. The best way is to water, not the plants, but the rocks—the force of the flow is thus broken, the soil is not disturbed, and the plants are watered just as well as if it was poured direct into the "pocket." This saves time too, for the same care is not required—the water flows all over the stone and waters all the pockets that surround it.

Again, when watering do it liberally, give a good saturating, and then leave it alone for a few days. In very hot midsummer weather it will be all the better to water every evening, but if for any reason it is inconvenient or impossible to do so, no harm will result, they will go for three or four days even, at that time, without suffering. In spring, when growth is commencing, a good watering once or twice a week is enough. In autumn once a week or ten days is plenty, unless there is some very hot dry weather, when they should be watered about three times a fortnight.

It will be seen therefore that the labour of watering is not very deadly.

In one corner of the house a dipping tub should be provided, not only for the convenience of dipping the can to fill it, but in order that, being kept full, you have a supply of water near the temperature of the house, so that the plants are not chilled by the cold water fresh from the supply pipe. If the supply laid on to the house is "soft" like the Verry water supplied to Dublin, it may be freely used for all purposes; but if it is "hard"—that is, contains a quantity of dissolved lime, it should not be used. It will be necessary then to make provision for catching the rain-water from the roof, either in a series of tubs or in a large cistern, made by sinking a hole in the floor and lining it with cement. This is a laborious and costly job, and keeps the water really cooler than we would like it. A couple of paraffin barrels cut in half will make four serviceable tubs, which will give a sufficient supply. These may be all connected together, either near the bottom, by a short straight piece of lead pipe, or, better, near the overflow level at top by a bent lead pipe which reaches from the bottom of one to the bottom of the other. This acts as a syphon and keeps the water level the same in all four tubs. It is better than the former method, as there it is very difficult to prevent a leak, which will drain the tubs; where the connection is

made above, a small leak is no harm, as it can only occur when the tubs are already full. If the syphon gets air-blocked, an awl hole at the upper part of the bend will at once correct this, the hole being then plugged by a bit of wood.

Ventilation is the next consideration. The first general principle is that ferns dislike a draught, but rejoice in still air. Second, they dislike dry air and rejoice in a moist atmosphere. Third, they dislike changes of temperature; the greater there

absence of competition from the Colonies fruit growing should pay well when there is a fair crop. But what if there is no crop? some may say. That is just the point, and the question is, Does fruit growing by itself pay? or must it be combined with some other branch of horticulture or with agriculture? There seems some ground for thinking that the farmer who takes up fruit growing and determines to do it thoroughly is on the right track. Manure, sooner or later, is a necessity, and

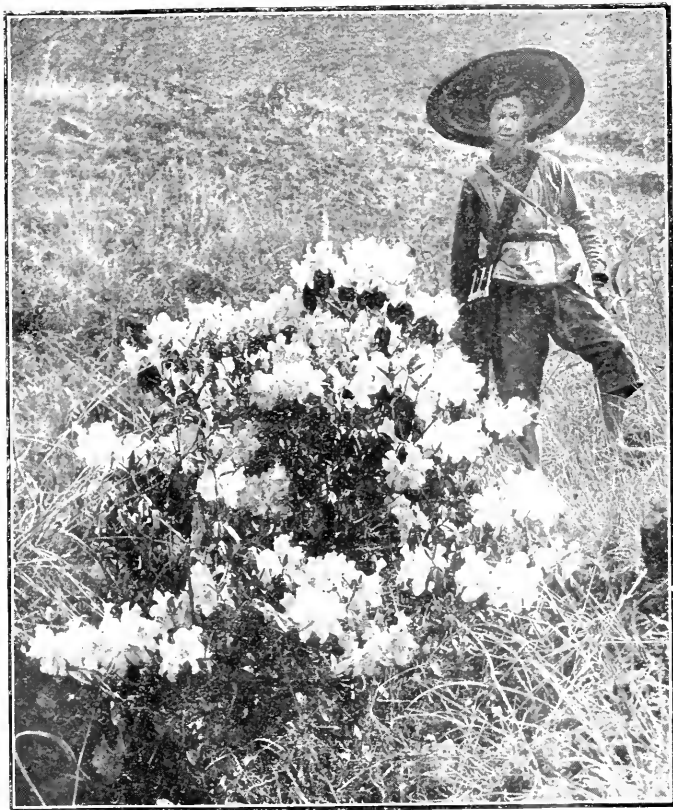


Photo by

[Mr. G. Forrest.

RHODODENDRON CHINGALEX IN CHINA

are, and the more rapid, the worse. Fourth, that these likes and dislikes are much more pronounced in the "growing" period of the year—that is, when the ferns are making fresh new fronds, than in the "resting" period, when the fronds are fully developed. With these four principles understood and kept in mind, the whole question becomes simple.

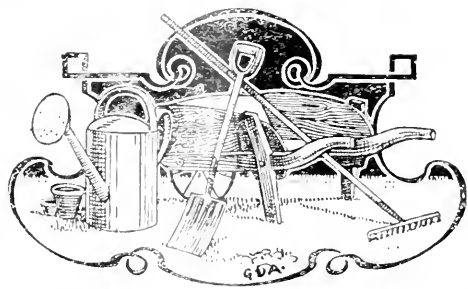
(To be continued.)

The Future of Fruit Growing.

Much has been written and spoken of this industry in Ireland for many years past, and much has been accomplished. The war caused a big increase in prices, as the Market Report in this Journal showed, and incidentally proved that in the

as a correspondent in a recent issue points out, it is hard to get. The farmer who is tilling his land and feeding stock is the one most likely to have manure to spare for fruit trees and bushes.

Moreover, it seldom happens that all fruits are a failure the same season, and this again leads one to ask whether it is wise to plant apples only. Another may ask what about a season when there is a glut of fruit of all kinds? Then it does not pay for picking. There should be some means of obviating this, in improved methods of preserving, by pulping, canning, bottling, &c., for the fact is indisputable that let the crop be ever so large, fruit is never cheap in our large cities, and half the population rarely get enough, as they cannot afford to buy it. What is the outlook for the future?



Allotment Notes.

ALTHOUGH the war may, we all hope, be virtually regarded as over, the demand for food, especially on the Continent, is still an urgent matter, and the cultivation of allotments one of national necessity. We are, however, going to suggest that where possible some space might reasonably be devoted on the allotment to a flower border. It has not been our experience that space devoted to flowers has resulted in a corresponding shortage of vegetables. Rather the best growers of vegetables are, without exception, men who can still find room for a flower border. In fact, the cultivation of a flower border is sometimes included under the rules whereby plots are let to tenants. Where the plots are so laid out that each plot holder can have access to his plot for a cart, it is usual for the flower border to be at that end of the plot adjoining the cart way. We can point to examples where these cart roads have resembled a broad avenue, in places overhung with arches of roses, and with flower borders on each side presenting a magnificent spectacle—the skill of some amateurs being unsurpassed in this respect. Now, we believe this to be all for the good. Allotment holders in these groups of plots have a real garden of their own, which is at once a pleasure to themselves, their families, and passers-by. Naturally this aspect of the plot has not been developed so much the last year or two, but it is surprising what can be done with the showy kinds of vegetables. A trellis is quite easily fixed with stout rods and string when will be suitable for Scarlet Runners, and display the beautiful green foliage and scarlet flowers in the summer. This may conveniently be placed four feet from the edge of the plot. In the intervening space odd plants of Carrots, the foliage of which, when well developed, is quite as elegant as many plants grown purely for ornamental purposes, Crimson-leaved Beet, an odd Parsnip, and a few flowers make a veritable war-time flower border. As the extreme urgency for vegetables slackens, the number of flowers can be increased, and Sweet Peas take the place of Scarlet Runners.

SEED SOWING.—The majority of allotment holders do not attempt to sow seeds as early as takes place in private and market gardens. One of the chief causes for this is, of course, the inability to be able to select a suitable site and to take advantage of the few days at this time of the year when the weather and soil are most favourable for early sowing of seeds. Where opportunities present themselves, many seeds may be sown during this month to give early crops. Broad Beans sown now will provide an early supply. If it is not intended, however, to sow this crop in a bed or rows, a few seeds could be sown between other crops. Parsley is a profit-

able crop to these allotment holders who sell their surplus produce, and a small sowing can now be made. Parsnips grow well on ground which has previously been occupied with Celery trenches, as this vegetable enjoys a deeply worked soil and a long season of growth. Rake the surface soil as smooth as possible, and draw drills 15 inches to 18 inches apart. Sow very thinly; this plant makes a lot of growth, and is too often shamefully treated by plot holders. If extra fine roots are wanted for exhibition, holes may be made with a crowbar, filling up with finely-sifted soil, and then sowing a few seeds. A small sowing can be made of Celery in pots or boxes in a heated frame or greenhouse. As soon as the seedlings develop, watch that they do not become overcrowded, and keep the young plants near the glass to prevent them becoming long and weak. Early varieties of Carrots and White Turnips can be sown where the soil is light and easily warmed by the sun. Peas of the first early varieties may also be sown in similar positions, but precautions should be taken against mice, slugs, &c. Usually a dressing of soot and finely-sifted coal ashes prove effective against these pests. Towards the end of the month sow in boxes Brussel's Sprouts, Broccoli, and Cauliflower, transplanting them when large enough into frames. Many allotment holders purchase these plants, especially Cauliflowers, and often, unfortunately, introduce on the plot Finger-and-Toe or Clubroot disease. More than once we have observed young plants of the Cabbage Family exposed for sale where allotment holders usually purchase, which were simply full of this disease, the nature of which the allotment holder was ignorant of, being in its early stages, but which must have been quite apparent to the vendor. One of the greatest plant pathologists gave it as his opinion that if seed-beds for the various kinds of cabbages are properly lined the plants will grow up free from disease, as infection takes place in the seedling stage or quite early period of growth. Experiments we have carried out appear to confirm this statement, and further trials will be made.


PREPARATION OF THE SOIL.—Every opportunity should be taken to complete the work of digging and trenching. Where the ground was dug over in the autumn, advantage should be taken when the land is dry to work the soil and attempt to get it into a condition ready for sowing seeds. This applies particularly to light soils. No advantage is gained by attempting to work on heavy or clay soils when the land is wet; rather the reverse in fact. The keen, dry winds of March make a great impression on heavy land.

SPRING CARE.—Examine the rows of these plants, and where there are gaps fill these up with young plants from the seed bed.

SHALLOTS.—Shallots are grown extensively on allotments, and probably no crop is more easily grown. Moreover, under good conditions they are most prolific, and provide a good substitute for Onions. Shallots also have the advantage of ripening early and keeping well through the winter. They may be planted during February on ground that has been well manured. Press the bulbs firmly into the ground about 9 inches apart and 12 inches between the rows. About 3 lbs. should plant two rows 30 feet long. If the soil is suitable, plant also Potato Onions.

JERUSALEM ARTICHOKES. This crop has been suggested as a substitute for the Potato. However, it is usually planted in any odd corner. It is a gross feeder, and under the best conditions grows rather tall and suffers from autumn gales. The tubers should now be planted, where it is intended to grow this crop.

G. H. O.



February The Month's Work.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

HERBACEOUS BORDERS.—Where no replanting is to be done, the borders may now be forked over and a dressing of short manure worked in. Montbretias soon deteriorate if left too long undisturbed. They should be lifted every second year and the best corms replanted at four or five inches apart, in a fresh situation in the border if possible. The present month is a suitable time for doing this, and also for overhauling the Michaelmas Daisy Border. With the latter it is best to replant quite small pieces detached from the outside of the clumps, subsequently restricting each plant to about 6 growths, which should be staked out separately. In this way they will bear flowers up their entire length instead of only a few on top as is so often seen.

BORDER CARNATIONS.—If these have been wintered in small pots in frames they should be planted out in their flowering quarters at the first opportunity, when the ground is dry enough to tread firmly. A good dusting of soot well raked in before planting will be beneficial to the plants. Carnations should be planted firmly at one foot apart each way.

BOX EDGINGS.—Where these need attention this is a suitable time for replanting, and, as all the work can be done on the path, it will provide work for a showery period. The old edgings may be taken up, and after cutting a straight edge with a spade, pull the old plants to pieces and lay the shortest and best pieces thickly in a single row along the small trench thus provided, afterwards drawing in the soil on the inside, and treading firmly.

LAWNS should now be well brushed and afterwards rolled. The edges should then be neatly cut with a sharp edging tool. Owing to the mild winter patches of the grass will have grown too long for the lawn mower, and these should be cut over with a scythe before the lawns are swept.

SWEET PEAS may now be sown in pots or boxes of good soil, placing the seeds about an inch apart and covering lightly with fine soil. Water in carefully with a fine rose and put the boxes in a close house to germinate. As soon as the seedlings are up remove them to a cooler structure, and gradually, as the plants become stronger, harden them off in readiness for planting out in April.

THE VEGETABLE GARDEN.

January has been so wet that ground work is very backward. No digging has been possible here up till now (Jan. 22), but rough forking between trees and similar work has been cleared up, so that all available strength can be put to the digging as soon as suitable weather occurs.

Another row of Peas may be sown as early in the month as possible; for this sowing the Pilot is a good variety. Shallots, too, may be planted in well-manured ground made firm by treading. The bulbs should be buried to half their depth and made firm in the ground, so that the roots pushing from the base will not force them out of the soil.

THE HERB BORDER.—New plantations of mint and other perennial herbs may now be made. The border should be well manured and the various herbs arranged in neat beds of a suitable size, having regard to the quantity of each kind that is usually called for.

A little Parsley seed should be sown under glass towards the end of the month, afterwards pricking out the seedlings in a cold frame to be eventually planted outside in April. A small bed of Parsley grown in this way will provide an enormous supply, besides being an attractive feature of the Kitchen Garden. Other vegetables that repay similar treatment include Brussels Sprouts, Cauliflower and Onions, but in the case of the last named the second pricking out may be dispensed with.

POTATOES.—If the main crop Potato "seed" has not yet been selected, no time should be lost before doing this, and either "boxing" it or laying it out in a light, airy shed. Boxes for this purpose are strongly recommended, as they can be packed up one above the other around the shed or loft. Moreover their use leads to much saving of labour at planting time, as they are simply carted to the field, and the seed planted straight from them into the drills.

THE FRUIT GARDEN.

The winter spraying of fruit trees should, if possible, be completed by the middle of the month. The alleys and borders can then be dug and, where it is necessary, manure can be applied at the same time. The surest guide as to when manure is needed is in the amount of new growth a tree is making. It is most important, besides encouraging fruitfulness, to keep the trees growing healthily, otherwise the size and quality of the crop will soon deteriorate. On the other hand, if too much growth is being made, manure should be withheld, and in some cases root pruning may be necessary. When the pruning of bush fruits is finished the plantations should be forked over.

These usually carry heavy crops, and manure is necessary every second year, alternating this with a good dressing of lime or superphosphate.

It will be expedient before the end of the month to have some covering in position for the protection of Apricots from frosts. Any light canvas or similar material that can be removed in the day time will answer the purpose. The buds are already showing white here (Jan. 22nd), and look like being even earlier in flower than last season, when the trees were in full bloom by the end of February. This involved a long period of nightly covering up, but the result fully repaid the extra trouble, as the trees perfected heavy crops in a season of scarcity in spite of several heavy frosts during the flowering period.

Midland and Northern Counties.

By W. ROBERTS, Gardener to Lady Emily Bury
Charleville Forest, Tullamore, King's County.

FORCING HOUSES, &c.

ATTEND carefully to previous sowings in heat for early supplies, and put in more Cucumber and Melon for succession. Also Tomato, Cauliflower, and Forcing Carrot. A few of the earliest Peas may also be sown in sods or boxes, and attend to the slaking of these already requiring same either under cover or in the open. Asparagus, Seakale, and Rhubarb may be put in for succession, also Onions in boxes for planting out later. Those so treated seem to withstand the attacks of mildew and mite better than the old orthodox sowings out of doors in March. Sweet Peas should also be sown in sods, boxes, or pots for transfer to the open later on, care being taken to avoid anything in the nature of coddling. Move them to a cool, airy house or frame as soon as they are well up. Sowing may be made of such things as Begonia, Gloxinia, Dahlia, Lobelia, Pansy, Golden Feather, and innumerable other subjects, according to individual taste or fancy.

Attend carefully to disbudding of early Peaches and Vines, and where the former are in flower maintain a comfortable atmosphere, and on dry, sunny periods, if the prominent flowers are gone over with a camel hair brush or a rabbit's tail—the latter I find the best—it will help the fertilisation of the flowers most required. The same remarks apply to early Grapes, though in some places like this it is not necessary, care being taken in both cases to have both flowers pollen and brush perfectly dry.

THE KITCHEN GARDEN.

PARSNIPS.—This is probably the best month to sow main crops of this very desirable vegetable. It succeeds best in a deep, sandy soil or light loam in good heat; but on no account should the ground be manured immediately in advance of sowing as the majority of the roots will be forked and useless. The essential point is to prepare the ground by deep digging or trenching in autumn, allowing the surface to remain rough during the winter and break it down to a fine tilth before sowing. The difficulty, of course, is to get the ground sufficiently dry, but advantage must be taken of the first favourable opportunity to get the seed in, as they require a long season of growth to bring them to perfection. Where rust

is troublesome a liberal dressing of soot raked in at sowing is the best preventative I know of. Sow in shallow drills, 18 inches apart, dropping the seeds in twos or threes at a distance of 6 inches apart. Cover lightly, and if the soil is too rough or inclined to be sticky a little sifted old potting soil makes an excellent covering. As soon as the plants are well visible, thin to prevent crowding, finally thinning to about one foot apart according to size of roots desired, and keep thoroughly clean while growing by the use of the hoe. Good roots may be grown in the worst forms of clay or stony ground by boring holes and filling them with fine sandy soil and sowing a few seeds in each. Parsnips keep and retain their flavour better in the ground than out of it.

Autumn and Early Winter Broccoli may be sown now both in cold frame and the open ground, and Cabbage should be planted out plentifully to follow those put in last autumn. A good plan is to transplant those left in seed beds from July and August sowings in nursery beds or rows on a sheltered border as they make excellent plants to put into permanent quarters at this time as well as those raised in heat or potted as suggested in January Notes, and I find in cold localities the former give the best results. Brussels Sprouts, Cabbages, Lettuce, Turnips for succession may be sown on a warm border; also Broad Beans, Parsley, Radish, and Round Spinach, but where such a border is not available better defer until next month. The same remark applies to Shallots, Potato Onions, and Early Potatoes. There is no hurry *re* the latter for outdoor cultivation if properly sprouted. There used to be considerable difference of opinion and prejudice in some places as to the advantages of sprouting, but I notice that it has become almost universal round here—*i.e.*, for early sowings, and than which there is no better proof of its beneficial effects.

GENERAL REMARKS.—Complete without delay all work that, through weather conditions or otherwise, has had to be left over from last month in all departments, for as the season advances it will be found that there will be more than sufficient to attend to in the way of seasonable work without having always to be "pulling a certain gentleman by the tail."

Rainfall in 1918.

	Inches	Rain fell on	25 days of the month.
Jan.	1.06	.. ..	26
Feb.	5.13	.. ..	15
March	1.19	.. ..	13
April	1.51	.. ..	11
May	2.93	.. ..	12
June	1.57	.. ..	20
July	3.96	.. ..	18
August	2.85	.. ..	25
Sept.	6.16	.. ..	21
Oct.	3.39	.. ..	19
Nov.	1.02	.. ..	29
Dec.	5.81	.. ..	.. ..

12.91

Showing a total fall of 12.91 inches and 237 days on which rain fell.

J. MATTHEWS,
Tourin,
Cappoquin, Waterford.

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Contents

	PAGE		PAGE
Lavatera olbia and some others (Illustrated)	33	Sweet Peas after the War	40
Notes on the Propagation of some Alpines	34	Amateur Fern Growing	42
Pruning Roses (Illustrated)	35	Border Carnations	43
Veronica macrocarpa	36	Potatoes (Illustrated)	44
Rhododendron sphaeranthum (Illustrated)	37	Reviews	45
The Willow Industry	38	Allotments	46
Plants for Dry Shady Places	38	The Month's Work —	
Replies to Correspondents	39	Southern and Western Counties	47
		Midland and Northern Counties	48



The Vegetable Products Committee

IRISH BRANCH

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Offices of the Royal Horticultural Society of Ireland

5 MOLESWORTH STREET, DUBLIN

IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

VOLUME XIV
No. 157

MARCH
1919

EDITOR—J. W. BESANT.

Lavatera olbia and some others.



THE note on *Lavatera olbia* at Greenfields, in the November number, shows that in Ireland, as sometimes in the south of England, this handsome shrub loses much of its normal character in the damp and less sunny climate of the British Isles than of the Mediterranean region, where it is a native. But it is not so much the damp as the want of sun which give rise to the "delicate pink" of the flowers, and the "deep green leaves"—velvety though they may be.

In the Hyères district, in the south of France, whence this plant gets its specific name, for *Olbia* was the Roman name for Hyères, it is a characteristic feature in the landscape; and grows not only in waste places by road-sides, but on some of the sandy marshes near the sea. In fact, I have a photograph of it in winter associated with the Common Reed (*Phragmites communis*), the prickly *Calycotome spinosa*, *Spartium junceum* of our gardens, and other plants forming a dense thicket on sandy soil close to a stretch of water separating it from a fine belt of Umbrella or Stone Pines (*P. Pinca*) on the Plage de Gieus, below Hyères. Its brilliant purplish red or almost crimson blossoms, on long, handsome spikes, appear in May and continue until July. The leaves are well described as of the shape of an Ivy leaf, and like the Ivy, are variable in shape and size, the upper leaves being small and more or less hastate; but they are always covered with a dense velvety tomentum, which gives them a pale grey-green tint. The carpels also are covered with down. A few years ago there was a specimen of *L. olbia* on the road from Hyères to Carqueiranne, towards Toulon, with a woody trunk a foot in girth.

In England, the most brightly-coloured flowers of *Lavatera olbia* I have seen were near Christchurch, in Hants; and specimens in a rectory garden in Somerset were almost as pale as those described at Greenfields.

Of the score of known species of *Lavatera*, six grow as natives in France, and only one (*L. arborea*) appears indigenous on our coasts; though *L. sylvestris* Brot. (*L. cretica* L.) occurs as a casual in Guernsey, Cornwall and the Scilly Isles. *L. sylvestris* is a biennial, resembling forms of the Common Mallow (*M. sylvestris*), but the three large lobes of the calyx distinguish it. The petals are likewise deeply emarginate, but three of the purple veins are prominent and two are less so.

L. arborea, the Tree Mallow, of which we give a photograph of part of a big shrub taken on March 12, 1913, in the Var, France, is also a Mediterranean plant; but it extends round the west coast of France to our own shores. In Co. Kerry it is considered by Dr. Scully as truly native on some of the islands off the coast, "very rare on sea-cliffs and rather frequent in gardens and about houses, especially near the sea." Such a description of its status would well apply to the plant in both Somerset and Cornwall. Mr. Lloyd Praeger also considers the Tree Mallow "without question native in Clare, on sea-cliffs and stacks on Inishmore and at Spanish Point." Its blossoms are pale rose-coloured with glossy purple-black centre and veins.

The three other species of *Lavatera* found in France are *L. punctata*, an annual, with large lilac-pink flowers, which are solitary in the leaf-axils; *L. trimestris*, also annual, and with handsome bright-rose blossoms placed solitary in the axils of the leaves, and with a glabrous fruit, having a concave disc covering the car-

pels; and lastly, *L. maritima*, a very beautiful small shrub, with almost woody stem two to three feet high. The leaves are orbicular, grey tomentose in colour, and the upper ones angular. The flower-stalks are solitary, and bear an elegant blossom of very pale pink, with a crimson blotch at the base. The carpels are glabrous and wrinkled. It is the earliest to flower, and grows very locally on maritime rocks and stony places in the south of France, Spain, Italy, Corsica, Sardinia, Tunis, Algeria and Morocco. I have seen its pale blossoms decorating sea-cliffs beneath a fort near Toulon, and on limestone cliffs at about 2,000 feet on Mont Coudon, in the same district.

H. STUART THOMPSON.

Notes on the Propagation of some Alpines.

THE following notes are from my note-book. I claim neither originality nor superiority for the methods described; all I can say for them is that they have given me good results:—

Seed Raising.—There is much to be said for and against autumn and spring sowing. On the whole, I have got the best results from autumn sowing. One is not so busy then as in spring, and seeds planted as soon as ripe often germinate quickly, and make sturdy growth before winter. If the seed is very small and the plant rare, special precautions must be taken, but for the large majority sowing in finely sifted sandy soil in small pots is all that is required. The soil must never be allowed to get too dry, and a pane of glass may be kept on the pot until the seeds germinate. If they do not appear before winter the pots are plunged in sand, either out-of-doors or in frames, according to their variety, and in the spring they are plunged into a mild hot-bed, and soon germinate. I know one is told by the books not to raise Alpines in heat, but when they will not show up in the autumn I always plunge them, and so far have found only one plant that really disliked such treatment, *Primula japonica*, which does not seem to germinate in heat. I have not, so far, noted any other failures, and one certainly saves a lot of time by "plunging."

Very fine, dust-like seeds one must be careful about. It is very difficult not to over-cover them with soil, and still more difficult to water them. I know one can plunge the pot in water and let it soak; but that not only requires time and watching to see that the pot is not absolutely sodden, but it tends also to make the soil sink as the water drains out. I avoid all

such difficulties by not planting them in soil at all, but on very fine moss. I often noticed how well plants seeded themselves on mossy rocks, and searching round, soon found tight, velvety moss growing on old brickwork. I always use such now, laying it on top of the soil in pots and then simply sprinkle the seed on it. The fine moss holds the seed and keeps it just right in every way, and one can water overhead with a fine rose without washing all the seed to the pot's side. Very little watering is required, and there is less danger of seedlings dying off suddenly in warm weather. For a busy man, these "moss pots" of mine are a great boon.

Seeds of moisture lovers—*Primulas*, *Ramondias*, *Haberleas*, *Ourisias*, &c.—grow better in sandy peat, with which a little finely-riddled Sphagnum Moss is added. For all small plant purposes I find a riddle made of a piece of perforated zinc (such as is used on meat-safes) nailed to the bottom of a square box the best. The riddled soil is fine enough for the smallest seeds. The Sphagnum should be dried, and rubbed through this riddle, and then mixed with the soil. *Aethionemas*, *Mossy Saxifragas*, *Dianthus* and *Alyssums* seed themselves freely if their pots are plunged in a sandy bed when the seeds are ripe. *Ramondias* are very slow in coming to flowering size. One lot of seedlings from a spring sowing, I got a neighbour, who owns a stove-house, to grow them in it. He kept them there the whole winter, and most of them flowered the following spring. *Lithospermum Gastoni* transplants very badly, and should be sown one seed to a small pot, and put out young without breaking the "ball."

Cuttings.—*Saxifragas* grow freely from cuttings; the best time to take them is a fortnight after flowering is over. A sandy bed in a cool greenhouse is excellent for striking them; failing that, place round the edge of pots filled with sandy soil or pure sand, keep moist and under a cloche.

Campanula cuttings, taken in early spring as they begin to leaf, with a bit of the underground stem, root freely and soon.

Viola cuttings root best in autumn, but strike readily in moist, sandy peat in full sun under a cloche in spring. *Campanulas* with fleshy tap roots should be tried by root cuttings—slicing the root and placing the slices in sandy soil near the surface. *Morisia Hypogaea* can be propagated indefinitely by this method; care must be taken to plant the root cuttings pointing the right way up. *Aethionemas* root freely in pure sand.

The French method of striking cuttings is extremely quick, but should not be undertaken unless constant attention can be given. The cuttings are planted in very sandy soil in late

spring and summer, in *full sun*, kept close under cloches, and the soil never allowed to become dry. Watering is necessary, sometimes almost hourly. The cuttings root tremendously fast, but a short delay in watering, and good-bye to the lot! Cuttings taken with a "heel" should have the heel slightly pared down. Cuttings without a "heel" should be cut off just below a "join" or ridge where two leaves were sprouting.

Layering.—Most woody stemmed Alpines can be layered, and if they are difficult as "cuttings" layering should be tried. Select stems near the ground, "snick" them with a knife just below a "join," cut about half through and then up at right angles, and peg down the cut portion in a depression of light sandy soil, and cover well over with the same. Some Alpines are very difficult to propagate at all, *Linum salsoloides prostrata* especially. Some of the rarer *Acantholimon*s and *Erinacea pungens* are almost equally difficult. With them I have succeeded by a dodge I call "pot layering." Before "snicking" them the bark on the side to be snicked is scraped with a penknife for one-eighth of an inch and left for a week. The snick is then made, but the upper cut omitted (I do not know why some plants object to the upper cut, but my experience is that the harder the wood the more likely the layer will wither if upper cut); the layer is then drawn through a small thumb pot, until the "snick" is about $\frac{1}{2}$ inch inside the pot. Crock, sufficient to prevent soil coming out at bottom, is put in, and the layer tightly potted with sandy soil. The pot is then sunk and covered with soil, as an ordinary layer, and usually, in time, roots well, and the rooted layer is then freed from the parent by cutting off just below the pot. This is the only method by which I have succeeded with the Linum.

Certain hardwoods—like dwarf *Colonicasters*, *Ericas*, *Andromeda tetragona*, &c.—seem to root even more readily if in moss, and I never trouble to layer these, but just sprinkle moss well over the branches on the ground and leave it there, and they soon throw out roots. *Cytisus* strikes badly, and varies from seed but increases readily by grafting on seedling Laburnum in spring. Tufted plants, like *Dianthus*, root readily if fine soil is worked into the tufts as a top-dressing, and *Drabas* likewise. Most *Geraniums* can be increased by root cuttings. Rare *Sempervivums* not disposed to make offsets can be made to do so by stripping off the heart of the rosette, when youngsters will be given off around the bare stem.

MURRAY HORNIBROOK.



Photo by]

[H. & S. Thompson

LAVATERA ARBOREA

Pruning Roses.

WITH the exception of Ramblers, March is the principal month for pruning Roses. It is customary to begin with the Hybrid Perpetuals and Hybrid Teas, dealing with the Tea-scented varieties towards the end of the month. To give complete and absolute directions for pruning Roses is a difficult matter on paper, so much depends on the vigour and age of the Roses. One rule may safely be observed, and that is—all newly-planted Roses should be cut hard back to within a couple of buds or eyes of the base, and weak shoots should be removed entirely. Any Roses planted late this spring should be cut back hard, whether they be climbers or bushes.

The general collection of Hybrid Perpetuals should be dealt with according to the vigour of each plant. All varieties do not grow equally well in all gardens: some flourish in certain soils and localities better than in others, and they must be pruned accordingly. Weak

growers should be cut back to two or three buds, removing altogether the weakest shoots. Strong, vigorous growers may have the strongest shoots left longer, say, from four to six buds, cutting away the weak, thin shoots entirely.

Hybrid Teas are the most popular of Dwarf Roses at the present time, and contain some of the finest varieties for cutting, exhibition and garden decoration. Much the same remarks regarding pruning apply to these, except that the strong growers may be left rather longer than the Hybrid Perpetuals, as each bud left will "break" and grow into a flowering shoot in a comparatively short time. Hybrid Perpetuals, on the other hand, naturally make a longer shoot before the flower appears, and if not pruned fairly hard back the plants are apt to become unwieldy, the young shoots weak, and the flowers poor.

As illustrating the difficulties of giving written directions for pruning, it has to be admitted that there are exceptions to the rule of cutting back. For instance, some varieties are so exceptionally vigorous that to cut the strong shoots hard back results in the production of other strong shoots, that keep growing so long that only a few flowers are obtained. Such varieties should have the weak shoots only cut hard back and the strong ones pegged down horizontally; each bud will then shoot forth, and grow to a length of twelve or fifteen inches, and produce flowers—thus from one plant quite a large number of flowers will be produced early in the season. Examples of such varieties are seen in Hugh Dickson, Fran Karl Druschki, and George Dickson.

Tea Roses are not usually so hardy as either of the above classes, and are less extensively grown. After a severe winter many are found to be severely injured, in many cases the shoots being killed right back to the ground level, and sometimes the entire plant is killed. Lovers of this class take steps to protect their favourites by mulching heavily with strawy manure, bracken ferns or leaves, and in this way contrive to bring the plants safely through the winter. The pruning generally resolves itself into cutting away all dead wood and weak spray growth. Any strong shoots not killed may be cut back to a point where the wood is good and well ripened. The buds below this will "break," and produce vigorous growths, which will soon bear flowers. Frequently good young growths are produced from below the soil-level by shoots which have been killed back by frost.

China or Monthly Roses are allied to the Teas, but are more vigorous, and make excel-

lent subjects for massing in beds for colour effect. After the first season they should be pruned lightly, removing only weak and dead shoots, and very slightly shortening the strongest ones. Examples of this class are—Cranioisie Superieure, Fellenberg, Hermosa, Laurette Messimy, and Queen Mab.

Climbing Roses, so-called, can be divided into two sections for pruning purposes. Those which belong to the Dorothy Perkins, Hiawatha section, are ruined by being cut hard back in spring, except in the first year of planting. They flower on the numerous growths made the previous year, and should be pruned *after flowering* by cutting out the growths which have flowered, leaving the young growths intact, unless some requiring removal to give the others light and air.

The other section—including such varieties as Gloire de Dijon, Climbing Caroline Testout, the climbing forms of Mrs. W. J. Grant, Captain Christy, La France, and others—should be attended to now, removing the weak growths, as in the bush forms, and lightly shortening the strong shoots before securing them to their supports.

Pillar Roses may be treated similarly. They include varieties which do not grow so tall or long as the climbers or rambles, and are used to furnish the lower part of pillars and walls. Examples are—Ards Pillar, Bardou Job, Gruss au Teplitz, and others of similar habit.

The pretty Dwarf Polyantha Roses are valuable for beds and cutting. After the first year they should be pruned lightly, removing only the weakest growths, and keeping the centre of the plant open. Good varieties are—Jessie, Mrs. W. Cutbush, and The Orleans Rose. With regard to the so-called Pernetiana Roses, it is the writer's experience that pruning becomes merely a matter of cutting away dead-wood, and after that there is usually but little left. Undoubtedly, the colouring of these new Roses is gorgeous, but they are apparently tender. Examples are—Madame Edouard Herriot, Juliet, The Lyon Rose, Rayon d'Or, &c.

Rosa.

Veronica macrocarpa.

It is somewhat surprising to find a shrubby Veronica in full flower early in February, but such is the case with *V. macrocarpa*. Possibly the absence of prolonged or severe frost accounts for it, as the species is not usually one of the hardiest. Nevertheless, it is a shrub worth having, and worth giving a sheltered

position for the sake of its early racemes of white flowers.

The leaves are up to five inches long and over an inch wide, rather abruptly pointed; the mid-rib, which is prominent below, has a slightly pink tinge on the upper surface.

The flower racemes are longer than the leaves, and are composed of a great number of comparatively large white flowers.

the same way as we can use *Rh. micranthum* and *Rh. longistylum*.

Rh. Sphaeranthum is described as having "reddish young branchlets, the leaves stalked and up to an inch long, thick and leathery; flowers rose or white, crowded at the tips of the branchlets."

From the illustration it is evident that this new species is one that will lend itself to cul-



Photo by]

RHODODENDRON SPHAERANTHUM.

[George Forrest

Rhododendron sphaeranthum.

THIS interesting new *Rhododendron*, which we figure in the present issue from a photograph taken in China by Mr. Geo. Forrest, is now in cultivation. It has flowered in England, and is described in Mr. Millais' sumptuous work on *Rhododendrons*. From the description, it appears to be an attractive dwarf species, suitable for the rock garden, in much

cultivation in a restricted space, and on that account is doubly welcome. *Rh. micranthum* alluded to above, flourishes on the rock garden wedged in between stones, with a restricted root space, and grows far better there than planted in the conventional bed of peat. Happily, there seems to be quite a number of species belonging to this twiggy-habited small-flowered section which will make good rock garden plants, and add yet another feature to our gardens.

The Willow Industry.

ONE result of the great war is seen in the revival of interest in Willow growing for basket-making and other forms of wicker work. There has always been a certain amount of Willow growing carried on, particularly in Leicestershire, but, perhaps, to some extent in Ireland also. Before the war, however, a great many Willows were imported from Belgium. This ceased with the outbreak of war; manufacturers were very hard put to it to carry on. There seems no adequate reason why all the Willows required should not be produced at home, and there is some reason to believe that the industry will yet become of importance both in England and Ireland if carried out on right lines.

The Board of Agriculture and Fisheries have a pamphlet, published in 1913 (Miscellaneous Publications, No. 18), dealing with the Cultivation of Osiers and Willows. This may be obtained from the offices of the Board, 4 Whitehall Place, London, S.W., price 2d., post free. Leaflet No. 391, recently issued, deals with Insect and Fungus Pests of Basket Willows.

Pamphlet No. 18 gives very clear directions on cultivation, including sections on soil and situation, preparation of various types of land, labour, planting, cleaning, costs, &c., the bulk of the information having been supplied by Mr. Paulgrave Ellmore, of Leicester.

The first thing that strikes the reader is the fact that the common idea that Willows will grow in any damp, wet situation is not necessarily correct, as far as their commercial value goes. The fact seems to be that first-rate farm land is necessary to obtain satisfactory results, and the land must be kept scrupulously clean and in a high state of fertility. Arrangements for supplying abundance of water at will are also advised.

Those who might contemplate growing Willows for profit must be prepared to go into the matter thoroughly, and spare no effort to provide suitable land, obtain the best commercial varieties, and attend thoroughly to cultivation during all the years the plantation remains in bearing.

Twenty years is the period given for a plantation to remain in bearing condition, while it may be profitable for ten years longer.

A considerable list of varieties is described in Pamphlet 18, mostly under their trade names, and under each is given the type of land to which it is best suited.

Having grown the Willows, however, there remains much to be done. The *Preparation for Market* is a highly technical business, demand-

ing skill and experience and the necessary tools and appliances. We have, however, in the pamphlet alluded to ample directions and numerous illustrations of various appliances used for cutting, peeling, butting, drying, &c.

It would seem from a perusal of the *Cultivation of Osiers and Willows* that the industry is one well suited to the climate and soil of Ireland. Although it does not follow that all wet soils would suit all varieties, there are great possibilities in the banks of some of our Irish rivers, where the soil is good, but subject to flooding. It would be a very good plan if a survey could be made of land suitable for Willow growing, but unsuitable for ordinary farming owing to periodical flooding or other causes.

This may be done while survey work is being carried out in connection with the hoped-for revival in forestry, or perhaps the lately-constituted Committee of Arboriculture of the Royal Horticultural Society of Ireland could collect information regarding the possibilities of the industry in Ireland. The Irish Forestry Society, too, might interest itself in what might prove to be a remunerative rural industry, and through its members in various parts of Ireland gather together particulars of available land and the demand for Willows in Ireland and Great Britain.

Plants for Dry Shady Places.

A GREAT many problems confront the gardener from time to time, and one of the most difficult to solve is how to furnish a dry, shady situation with plants. Usually such a place faces north or east, a sloping bank, or the space underneath large trees. The soil is usually poor from being permeated by roots of trees, which can forage afar for food, or it may be composed of stones and rubbish mixed with poor soil which has been excavated elsewhere. Wherever there is a fair degree of moisture it is possible to grow a fair number of plants, but the number adapted to withstand both drought and shade is limited. As a rule, they are those with creeping underground rhizomes, capable of storing a considerable amount of food as they grow, and vigorous enough to make their way through the poorest and driest of soils.

A good deal depends on giving the plants a fair start in such a position, and if a considerable area has to be planted, it will be well to try and fork it over as well as possible. This is not always easy, for the reasons aforesaid. Roots, stones, &c., all make the work laborious, and perchance at the time expensive, nevertheless it will pay in the long run. A few loads of

good soil, according to the area, would be useful, just giving each plant a spadeful or so at planting time. At the same time water should be given to thoroughly settle the soil round the roots. It is quite conceivable, of course, that water may be impossible where the planting is being done in a remote part of the garden or grounds; in these circumstances make doubly sure that the soil is well rammed round the roots.

If the position requires fairly large plants to properly furnish it, few shrubs are better than the *Aucuba*. The variegated form need not be planted where it is objected to, as there are very fine green forms available, and they are, without doubt, among the finest of evergreen shrubs. The root system of the *Aucuba* is very vigorous, and, given a fair start, it will flourish under the most adverse conditions of drought and shade. Next to the *Aucuba* the "*Mahonia*," or *Berberis aquifolium*, is most useful. Unlike the *Aucuba*, the root system here is sparse, and large plants move badly. It is best to begin with quite small pieces, planting firmly, and watering in if possible. Such plants usually become established, and soon begin to spread.

Another excellent plant for our purpose is the common Butcher's Broom, *Ruscus aculeatus*, which, planted in small pieces, soon takes hold, and grows into good-sized clumps. Under old Yew trees, where the shade is considerable, the soil dry, and full of Yew roots, nothing succeeds so well as Periwinkle, "*Mahonia*," Butcher's Broom, and the common trailing Ivy. These form an evergreen carpet, and effectively furnish what would otherwise be a bare, unsightly space. Another very good plant is *Euphorbia amygdaloides*, with dark green leaves on stems, growing 18 inches to 2 feet high, and carrying numerous yellowish green flowers in spring.

Where there is a fair amount of light *Hypericum calycinum*, often called St. John's Wort, makes an attractive carpet, bearing yellow flowers in summer; dwarf double Gorse, though a sun-lover, is not averse to a certain amount of shade, and grows in the poorest soil; *Euonymus japonicus* is very adaptable, and with a fair amount of care will soon become established in a dry, shady place, and will reach three or four feet in height; the dwarf creeping *Euonymus radicans* and its variegated variety will also grow in such a position.

There are not many herbaceous plants suitable for our purpose, but sometimes *Aquilegia*s will become naturalised under trees, though seedlings usually revert to the purple spurless type.

The pretty little native *Claytonia perfoliata* does quite well on a dry, shady bank under a large chestnut, seeds freely, and comes up in a dense mass annually; the tiny white flowers produced in early summer are quite attractive. *Campanula trachelium* is fairly good, and given a decent start, holds its own well.

On the whole, it is to shrubs we must look for the most suitable plants for dry, shady places.

GARDENER.

Replies to Correspondents.

A. DUNDAS.—*Plants for garden in low situation and of a boggy nature.* Many plants thrive admirably in boggy soil if given some care; in fact, many herbaceous plants rejoice in it. For the vegetable garden borders which you mention you could certainly try such plants as the Globe Flowers (*Trollius*), *Astilbes*, *Spiraeas*, Scarlet *Lobelias* *Phloxes*, *Delphiniums*, *Iris sibirica* Blue King and Snow Queen, strong *Primulas*, such as *P. japonica* and *P. pulverulenta*, the double *Caltha palustris*, *Lysimachia punctata*, *Mimulus luteus*, *Anemone narcissiflorum*, and probably *Anemone japonica*, *Lilium pardalinum*, *Myosotis* (*Forget-me-Not*), of various kinds, *Monarda didyma* and *Ranunculus amplexicaulis*. All these and many others are adapted for a damp soil such as you describe.

Of rock plants there is a wide selection, but perhaps your friend had better begin with the robust and showy kinds first, such as *Antennaria dioica*, *Achillea rupestris*, *Alyssum argenteum*, *Anemone Pulsatilla*, *Arabis albidula* fl. pl., *Arenaria grandiflora*, *Aubrietia* *Bridesmaid*, *Dr. Mules*, *Fire King*, *Moerheimii*, *Campanula carpatia*, *C. portenschlagiana*, *Dianthus deltoides*, *Dianthus plumarius*, *Gentiana acaulis*, *Geranium lancastrense*, *Iberis sempervirens* *superba*, *Linum narbonne*, *Lychnis Viscaria splendens*, *Phlox procumbens*, *Phlox reptans*, *Saxifraga Cotyledon*, *Saxifraga sancta*, *Sax. Elizabethae*, *Sedum roseum*, *Thymus serpyllum*, *Veronica Teucrium dubia*, *Anemone sylvestris*, *Aster alpinus*, *Mertensia echioides*, *Omphalodes verna*, *Primula pubescens* *alba* *Pulmonaria avernense*, *Pulmonaria rubra*, *Saxifraga Bathoniensis*, *Saxifraga Rhei* *superba*, *Saxifraga H. S. Stokes*, *Miss Willmot*, *Red Hussar*, &c., *Viola cornuta*, *Viola bosniaca*. The last 14 for the more shady positions.

Of peat loving shrubs you may try *Andromeda floribunda*, and *Andromeda japonica*, *Gaultheria Shallon*, *Erica mediterranea* and its varieties, *Ledum palustre*, *Empetrum nigrum*, *Rhododendron compactum multiflorum*, *Cassandra calyculata*, *Kalmia angustifolia*, and *Kalmia latifolia*.

There is no reason why *Azaleas* should not thrive, assuming, of course, that the soil is not water-logged. We are afraid the Plum tree would not flourish under the conditions described, but it would depend largely, of course, on how far the thatch projects and the provision of drainage to carry away superabundant moisture.

Sweet Peas after the War.

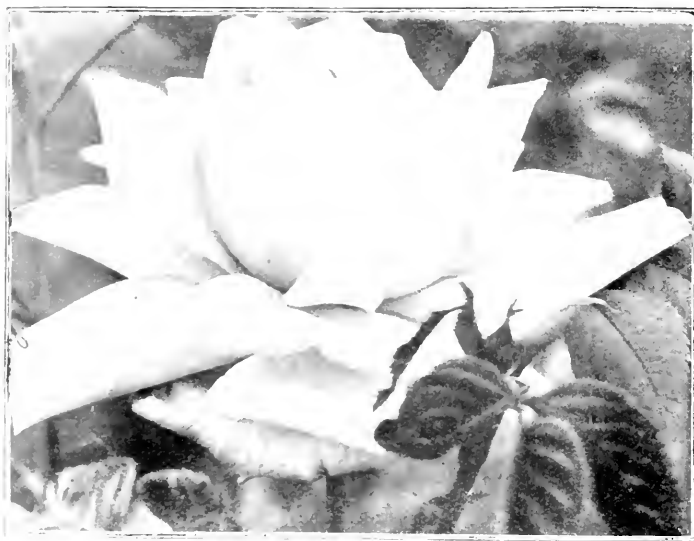
By the REV. MACDUFF SIMPSON.

THE titanic struggle which has convulsed Europe and caused upheaval over the wide world, has had a terrible effect on our common industries and ordinary occupations. Those who guided the destinies of our Empire called us to concentrate all our energies on the production of food, and a loyal response to that call induced many lovers of the Sweet Pea to restrict or abandon the culture of this favourite annual. In many cases societies did not hold their shows, while others curtailed their prize lists, so that there was naturally a sad falling-off in the interests of floriculture.

Happily all this belongs to the past, and the outlook for the future becomes brighter. The

It is, perhaps, too far advanced in the season to undertake the proper preparation of the soil, nor need we explain the best method by which very early flowers can be secured. Our task at present is to show what can be done with the opportunities still left to us.

Seed may be sown *at once* in gentle heat under glass, and when the plants are two inches high they may be hardened off and planted out in April; or seed may be sown in the open ground in March or April, when the weather is fine and the soil in a suitable condition. On no account are seeds to be put in wet and cold ground when germination is at a standstill, as the seed may rot before germination can take place, and the bulk of some choice varieties may be lost. I strongly recommend starting the plants in pots or boxes, as



LA FRANCE

H. T. Silvery Rose, still one of the best.

clouds of war have rolled away, and the sunshine of peace calls us to return to the garden, which four stern years of war have forced us to neglect, and I anticipate that lovers of the Sweet Pea will soon get back to their delightful hobby, for there is no other which has so many fine qualities to recommend it. For a trifling sum the cottager can produce a glowing effect at the door of his humble dwelling for a long period of the season, whilst the rich will feel amply repaid for a more generous outlay. The scientific expert can find keen pleasure in watching the law which moulds the life of this favourite flower; and as he sees the effects of environment, and views the results which may be obtained by intensive culture, he feels the fascination which makes his garden "a thing of beauty and a joy for ever."

It needs no further apology for introducing an old favourite and giving a few helpful hints to those who wish to take up with fresh enthusiasm their pre-war hobby.

you thus save your precious seed from many risks, and you will have better results by planting them out one foot apart than you could obtain from twelve seeds sown in the same space in the open ground.

As already hinted, it is too late for such deep trenching as we usually complete before the end of the year, but you can dig out a trench or hole 12 to 18 inches deep. In the bottom of this opening place six inches of well-rotted dung, and over this give a good dusting of artificial manure, and then cover in the loose earth, which may be allowed to settle for a week or two before the young plants are put out.

During the growing season plenty of moisture must be supplied. But instead of a daily sprinkling give a thorough soaking once a week. If this is done with liquid manure the advantage will be very great. Rapid growth is the secret of getting long stems, and without plenty of moisture this result cannot be secured.

The choice of varieties is a matter of great importance, and also one of great difficulty owing to the fact that hundreds of fine varieties have been put on the market in recent years, and this multiplication of novelties has made selection very perplexing. It used to be possible to name the best dozen in cultivation, but to do so in the

more (picotee), Maid Holmes (crimson), Margaret Fife (blue).

Raisers have been introducing novelties every year in spite of the war, but I cannot say that any new and striking shade has recently been brought under my notice. In fact, it is every year becoming more difficult to produce a genuine



MRS. JOHN BATEMAN

H. T. China Rose, yellow at base of petals.

altered circumstances now baffles the skill of the best expert.

The "National Sweet Pea Society" publishes annually a classified list of up-to-date varieties, and from this list it is comparatively easy for an amateur to select what he requires. I recommend the following:—Edrom Beauty (orange pink), Red Star (scarlet), King White (white), Dobbies Cream (cream), Lord Fisher (maroon), Hercules (pink), Austin Frederick (lavender), Rosabelle (rose), Beryl (cream pink), Mrs. C. W. Bread-

novelty, for the simple reason that all the tints of the rainbow have been introduced and multiplied many-fold. Still I am in favour of encouraging new varieties, as it is well known that fresh crosses inherit new vigour, and although you may not get an entirely new shade, you are likely to get larger flowers of finer form.

Now that the red flag of war has been furled, we hope to see the peaceful banner of the Sweet Pea planted on every show table throughout our land.

Amateur Fern Growing.

I. H. D.
W. J. W. W.

About the middle of February, especially in open seasons, the ferns begin to make their new roots, but nothing is yet to be seen in the crown growth. Early in March some loosening will be seen in the crown of curled-up young fronds which soon then begin to unfold. Just at this time we frequently have a clear sky and bright sun, but cold, dry east wind. Some glints of the sun reach portions of the glass house, heat rays as well as light rays pass through the glass, but, heat rays cannot pass out again, and the atmosphere within rapidly warms. The day is, however, still short, and the evening, night and early morning, are bitterly cold. If we are not careful the temperature will rise rapidly every sunny day, but every night will fall as low as that outside. The warmth induces the ferns to start into growth, and once started they tend to continue growing, but the young delicate succulent fronds will be perished and distorted if subjected to the cold at night. If we open wide the ventilators during the sunny hours, the cold wind entering will cause worse havoc. How can we get rid of these dangers. First, do not start the ferns too early, by premature watering and getting the temperature up too early. Second, when the season is more advanced, endeavour to keep the temperature moderate during sunny hours, and box up the heat for the other hours. To do this, keep all the lower ventilators tightly closed day and night; during the sunny hours keep the top (roof) ventilators open about one inch. Heated air tends to rise, and so it rushes out, through the small apertures you have given it at the ventilators, through which little, if any, draught will make its way in to cause damage. The heated air which rushes out is replaced by cool air filtered in through innumerable chinks under and over the door and ventilators, between the panes of glass, &c., so no draught is caused, but the temperature is kept moderate. As soon as the sun is going off the glass the top ventilators are closed, and the heat bottled up as much as possible. Though it falls appreciably, it remains above that outside, for a long time, probably unless there is cold high wind, till the sun of next day warms it up again. Even on a dull day, it will be found that the temperature inside the house will rise, for still some heat-rays make their way in, though they are much enfeebled, the temperature in consequence does not tend to become excessive, therefore on a dull day we keep all ventilators closed, and bottle up all the heat we can. This course is adopted all the time of active growth, and as the sun grows stronger, we further moderate the heat by frequent wetting of the floor, which promotes evaporation, and evaporation always means cooling. Before mid-summer it may be necessary to further prevent overheating by shading. This must be done on the outside of the glass, and if the house has a north aspect, the roof alone requires to be done. Do not use an oil paint, that is, a permanent shading, as it is unnecessary, and becomes dirty and opaque.

When the growth has become mature, the days have become long and the nights short, the top

ventilators may be left open one inch day and night, and during the hottest part of the day the lower ventilators may be opened pretty freely on the sheltered or non-windy side of the house, and the floor still kept wet. As the days shorten in autumn we give less water, and so gradually get the house drier, the floor water is given up, air still given and left on longer, to harden the foliage against the winter struggle. By the time November has arrived we have given up watering altogether, the lower ventilators are kept closed day and night. The upper ventilators remain open about half an inch day and night. This is not for the purpose of regulating temperature, which keeps practically the same as that outside, but to promote further drying and so diminish the tendency for moisture to condense on the cold glass, and drip down on the ferns, where it would at once set up decay. By this time, if we desire, we can take a trip ourselves to sunny climes, and revel in their warmth. The ferns will look after themselves and be quite contented and happy till we come back at the end of January. But if instead we spend Xmas at home, and wish to deck our dinner table with something of fairy lightness, to relieve the customary holly and ivy, we go to the greenhouse, as we have often done in other winters, and pluck a handful of maiden-hair, fresh and green and dainty.

A word may be said about artificial nourishment. If the directions as to furnishing good soil for the plants have been followed, they will continue to flourish for many years without any additional nourishment. If, however, it is seen that here and there the soil has become washed away, or the roots are exposed by the upward growth of the rootstock, a top-dressing of one part loam and two parts leaf-mould, will be advisable. In the case of strong vigorous growing kinds, a few waterings once a week during the growing season with water to which some Clay's Fertiliser has been added overnight, in the proportion of a small teaspoonful to a gallon of water—that is, a very weak application—will give great stimulus to growth, and will diminish the robbery of nourishment by this strong grower from its weaker neighbours. But if the plan for collecting rain-water from the roof is adopted, no additional artificial stimulant will ever be required. The soil and dirt washed from the roof will supply all that is necessary; it is given constantly in very weak solution, and will cause a healthy vigorous growth, and rich green in the foliage, that cannot be surpassed by any other line of treatment. If, however, the supply pipe is depended on rather than the roof-water, then fill a bag with soot, tie a brick to it, to sink it, and put it into the dipping tub. Renew it every six months or so. This is the finest of all "manures" for ferns.

We now have our fernery going splendidly, and there seems little to do except to go and admire the plants, and wish them to grow more quickly. But there are things to be done. Every bit of withered foliage should be snipped off with a scissors as soon as seen, and deposited always *outside* the house. Do not try to pull it off. Some withered stalks are very tough, and the attempt may disturb the plant in the soil, or even partly root it up. Keep down growths of everything that is not a fern. When you plant the rock-work first, it looks bare, and one thinks

of furnishing it, by planting creeping or carpeting plants. The advice is, don't. The ferns themselves will soon grow up and do the furnishing. Two plants especially are liable to get in, or be deliberately introduced, and undoubtedly look pretty, but should be rigorously excluded. One is the small-leaved yellow-flowered sorrel: it is dainty and spreading and attractive, but it greatly encourages greenfly, a very troublesome enemy. Another, the larger-leaved white-flowered wood-sorrel, is also most attractive, but becomes intolerable, and then ineradicable: it creeps under ground, pushes into every cranny between stones, insinuates itself into the very crowns and rootstock of the ferns, and forms such a mass of luxuriant growth, that it smothers the smaller plants, and draws no little nourishment from all. Both these plants have exploding seed capsules, which scatter the seeds far and near, so that when you attempt to clear them from a space, it soon appears green with innumerable seedlings.

The common mossy *Selaginella* is another plant pest to be avoided. It grows rankly and smothers things in summer, spots itself freely, and so appears in most unexpected places. In winter it with difficulty survives. Masses of it die and get mouldy, starting decay all around and spreading it over the house: as it decays it is almost impossible to gather and throw it out, as at the slightest touch it breaks up and floats away to spread decay elsewhere. The only one we would admit is *Sibthorpia*, but even it runs and grows rankly in the moist warmth, so should not be planted near any small-growing ferns, or it will smother them. It also seeds itself about freely. It is a most beautiful creeper, but should be strictly kept in bounds: this is very much easier than is the case of the other two, and it has no fault except that named.

Now concerning some animal pests. If our advice has been followed about the construction and preparation for the fernery, there will be surprisingly little trouble experienced with either slugs, snails or worms. This is a most comforting assurance. An odd slug or snail may have got in: if its traces are seen, either in an eaten plant or a slimy streak, seek assiduously for it, and if not found, set traps of orange-peel or potato slices, or damp bran with a drop of vinegar in it, and examine the traps both by night and day till it is caught, fearing not only the depredations it may cause, but the eggs it may lay, which would let loose a horde of spoilers on your preserves. Worms you need not trouble about, except that when you see one secure it and get it outside the house: we will deal with them otherwise later on.

Woodlice (or "slaters") will certainly make their appearance, and increase to enormous numbers. Their natural food is really dead or decaying vegetable matter, but in your anxiety to clear this all away, you leave the rapidly-increasing host too little food to subsist on, and so they will soon take to the green fronds, and cause alarming destruction. They creep up the mid-rib of a frond, attack the base of a leaflet, eating it through it soon falls to the ground, and they proceed to the next. Soon you will have the ragged mid-rib and secondary ribs standing gaunt and bare, and will find the ground below covered with curled up withered leaflets. We will also deal with these gentry later.

(To be continued.)

Border Carnations.

WITH the revival in flower growing which is bound to take place after the years of anxiety we have passed through, the Carnation is likely to come to the front. Hardy, free-flowering, and oftentimes sweet scented, what plant is more entitled to take its place in our gardens? Moreover, the border Carnation is everyone's plant, and may be grown on the allotment, in the cottage and villa garden as well as in the largest garden or park.

Its requirements are comparatively simple, but, such as they are, must be met. The wild form of the Carnation grows on old walls and ruins in apparently little else than mortar, and in this way shows its preference for lime. So with the cultivated varieties of the present day; if the soil in which they are to be grown is deficient in lime then an additional supply must be provided, either in the form of slaked lime or, better still, well pulverised old mortar rubble. A fairly heavy soil produces the best plants and flowers, but it must be well and deeply dug and thoroughly broken up. If exceptionally heavy, the addition of leafmould or well rotted manure will be advisable when digging; this tends to keep the soil from packing too close, and favours the development of roots. Light, sandy soils are improved by the addition of leafmould, decayed garden refuse, burnt soil from a bonfire when available, road or walk trimmings, or any other material that will give body to the staple soil. Soot is also a suitable material for incorporating in soil for Carnations, and may be scattered on the surface and raked in just prior to planting.

From the middle of March to the middle of April is a suitable time to plant, choosing a time when the soil is dry enough on the surface to work comfortably. At this early season there is quite sufficient moisture below to serve the plants for some time. Young plants from last season's layers are best to begin with, and the present is a good time to acquire a stock, if such is not already in hand. They may be planted in beds of a sort or in groups of anything from six to twenty plants at intervals in a flower border. The particular form in which they are planted must be left to the discretion of the planter. As each young plant planted now will produce a number of shoots from its base during the ensuing summer, it is obvious that not less than a foot of space should be left between each plant. This allows for the development of the side growths, and also facilitates layering in July should this operation be contemplated. It is well, when possible, to plant a few specimens for layering in an out-of-the-way part of the garden, as the plants in beds or borders may be left in their positions for two or three years, and will give a far greater number of flowers the second and third years, more especially if given some assistance in the way of a top-dressing of light, well-rotted manure in the second and third springs.

Layering, which is usually begun about the middle of July, consists of selecting one or more side shoots from as many plants as will give the desired stock, and, with a sharp knife, removing the lower leaves close to the stem for about half the length of the shoot; then from just below a joint where leaves have been removed cut about half way through the stem, and at the same time cutting towards the point of the shoot for about half an inch. This results in the formation of a "tongue," which must be gently pressed into the soil, which should be previously loosened with a fork or trowel. To keep the layer in position a

wire or wooden peg is inserted just behind the point where the cut was made and carefully pressed down until it grips the shoot, but too much pressure must be avoided or the shoot will snap. A little fine soil placed over the layered portion and around the shoot completes the operation.

When finished layering, if the weather be dry, give a good soaking of water, and attend to this subsequently should a dry spell ensue. Layers put down in July and early August will be rooted and ready for lifting in September and October. In some circumstances it is more convenient to let them remain till spring and then transfer to flowering quarters; but if a cold frame is available, and the necessary materials, the layers may be potted up and kept in the frame during winter, thereafter treating as advised above.

Quite a large number of varieties are grown nowadays, including self colours, fancies, and picotees.

For garden effect the writer prefers the selfs, but tastes differ on this as on other points.

A few good varieties are:—Bookham Clove, fine dark, crimson, purple, and strongly clove scented; Bookham White, Cecilia, a fine, large yellow; Crimson Gem, Elizabeth Shiffner, good rich orange; Dublin Pink, Miss Wilmott, coral pink; Mrs. Nicholson, rosy pink; Purity White, Child Harold, yellow petals margined rose; Daisy Walker, white, marked with rose; Linkman, yellow ground, marked with scarlet; Richness, yellow ground, edged and striped scarlet; Togo, a good yellow-edged red.

There are many other beautiful varieties, but intending growers may make their own selections from the catalogues of specialists. CARYOPHYLLUS.

William Power & Co., Waterford.

IN spite of paper restrictions Messrs. Power have got together in their abridged Seed Catalogue, an admirable selection of all that is best for the kitchen and flower gardens. Powers' seeds have an excellent reputation, and the firm has many selected strains of its own. In addition to the general list there are collections offered from 2s. 6d. up to one guinea, all of which seem of excellent value. Allotment holders would do well to study these collections as they offer a ready means of furnishing that part of the plot not occupied with Potatoes. The 5s. collection should be suitable for an average plot.

Mr. Richard C. Smyth.

Readers will notice in our advertisement pages that Mr. Smyth is again prepared to undertake landscape work, the making and renovating of rock gardens, herbaceous borders, bog gardens.

We had the pleasure of meeting Mr. Smyth the other day and found him well and as enthusiastic as ever after nearly three years' hard work in the Navy. He was stationed at a north sea base and has had many exciting experiences, but returns to the more peaceful paths of horticulture with his love of plants and beautiful gardens as strong as ever. Fortunately, many people who had reluctantly to give up alterations and additions to their gardens while war lasted are now contemplating a renewal of their plans as far as means allow, and we are confident that Mr. Smyth will soon be as busy as ever carrying out long delayed extensions and improvements, and, as opportunity allows, restoring his own interesting garden at Dalkey.

Potatoes.

PREPARING GROUND.—Provided the ground intended for Potatoes has been manured and dug in two or three spit ridges during the winter months, the soil in favourable weather should now be levelled down; if the soil is poor, a little artificial Potato manure will be found beneficial, and may be spread over the ground during the levelling down process previous to drawing the drills. The drills should be drawn 30 inches apart, 5 inches deep, and the sets 12 inches asunder in the rows for early varieties, and 36 inches apart, 3 inches deep, and the sets 18 inches asunder in the rows for later varieties. Some growers prefer to draw the drills deeper and apply well-decomposed manure in the drills at planting time, using a sprinkling of superphosphate as well. The idea of applying the manure and leaving it in the ridges during the winter months is—the soil is in a much drier and better condition at planting time, and where there is a lot of planting to be done it is surprising how quickly it can be done. (The writer had an acre to plant last year for early market, and this is the plan he used—all spade work.)

The Sets should be about the size of a hen's egg; if much larger than this they should be cut from top to bottom so as to be sure of having good eyes on each portion.

New Potatoes may be had from a week to a fortnight earlier by sprouting the seed.

The object of sprouting the seed or tuber before planting is to induce growth to start from two or three of the best eyes; any more than this should be rubbed off. If the "seed" is exposed to the light, but protected from frost, the sprouts will be slow in growth and sturdy, and much better for planting than if they were in the dark; there they would become pale and long and would be brittle and easily broken off. Another advantage of sprouting is that planting may be deferred for a month or more beyond the usual time.

Earthing-up.—This is a very important operation. A few days previous to earthing-up the ground should be well hoed to destroy weeds and to bring the soil in a better condition for drawing up.

Time of Planting.—The earliest may be planted in the beginning of March, but a warm, sheltered border should be chosen. The main crop may be planted during the months of March and April.

Points to be remembered for successful Potato growing:—

1. Have your drills running, if possible, north and south.
2. The addition of fresh, wet manure in the drills for Potatoes is an error, as it encourages a luxuriant growth, which is very liable to take the disease.
3. If the soil is rich in humus, use a dressing of lime forked into the soil a week or so previous to planting instead of manure.
4. Keep the Potatoes well earthed-up, and do not plant too thickly to try and get a big crop, or failure will be the result.
5. Spray your Potatoes at least twice—not necessary for early varieties—unless grown for seed.

A selection of varieties:—

Early Varieties:—Duke of York, Early Puritan, Jewelllyn.

Second Early.—British Queen, The Colleen, Main Crop—Arran Chief, Up-to-Date, Shamrock.

ANGUS SLATER.

16th Feb., 1919.

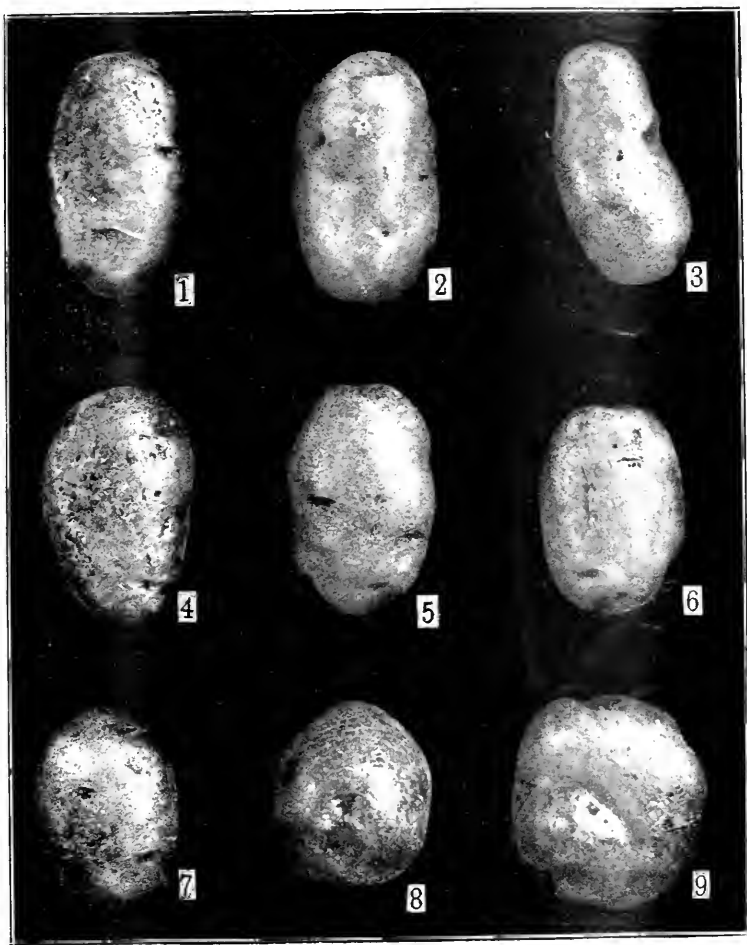
Reviews.

Jottings of an Allotment Gardener.

THIS little book of 150 pages contains a lot of useful information, and the price is reasonable—1s. 6d. net. The remarks on the cultivation of

but perhaps more information might have been given on Insect Pests and Plant Diseases. We think it is unfortunate that the author should speak of nitrifying, de-nitrifying, and acid-fermentation bacteria in a book of this description. Again, with many of the author's opinions we are not in agreement. To mention one of the points put forward—"Why should not the country give them (allotment holders) their seed?"

VARIETIES OF POTATOES.

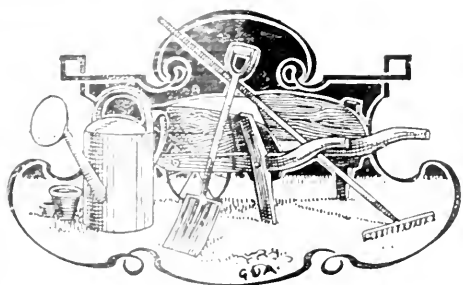


1 Duchess of Cornwall. 2 Factor. 3 Langworthy. 4 Scotch Triumph.
5 British Queen. 6 Up-to-Date. 7 Sutton's Abundance. 8 Black Skerry.
9 Old Champion.

vegetables are fully dealt with, and the information reliable. The book is written in the chatty style, and contains verbatim reports of the author's conversations with allotment holders. Whether the chatty style is desirable or not, no comment is offered, except that it is desirable to mention it. Manures are fairly well dealt with,

These are, however, minor points, and form but a small portion of the book. The book is suggestive and in many ways useful. It contains sound advice, which is arranged under separate chapters and quite easily followed. An allotment holder will find it a useful book.

G. H. O.



Allotments.

THE month of March is an important one if the most is to be made of the allotment. A systematic arrangement of the allotment is necessary, and constant attention is also required. In the cultivation of small areas a higher standard of production is required than that demanded from large areas such as a farm, and the quantity of manure applied and the labour required is much greater. On the allotment no vacant spaces should be allowed, and one crop will follow another in quick succession. As far as possible, the plot should run east and west and the rows north and south. This will give the maximum amount of sunlight to the crops. The area of an allotment is too small to show a profit on labour, as well as seeds and manure; but all expenses should be paid by the value of the produce, in fact, there should be a considerable surplus. I have seen quite a number of accounts of allotment holders who kept a record of their expenditure and the market value of their produce, and in every case the balance was on the right side, and this in some cases by men who had never previously handled a spade. In urban districts chiefly, and to a certain extent by men in the towns, especially men who have migrated from the country districts, the methods adopted by a farmer are copied. This is a mistake. It is not possible in a small garden to adopt the rotation of cropping as practised by farmers, and in many other ways the system of cultivation is unsuitable. A farmer proceeds on well-defined lines for years, but on an allotment it is impossible to recommend any particular course of cropping as the best. This depends on the size of the allotment, the quality of the soil, and the manure at command. A safe rule to adopt to obtain the most from the plot is to manure largely, dig frequently, and plant any crop that is fit for planting out when the ground becomes vacant. By carefully following a calendar of garden operations each month, and sowing seeds, &c., when recommended, vegetables can be obtained from the plot throughout the whole year.

SEED SOWING. The row system should always be adopted on the plot. The plot has a better appearance, but, much more important, seedling plants are not so apt to become overcrowded as when sown broadcast. Less seed is required. The seedlings are easily thinned out; the plants remaining do not require to be transplanted, and weeds are easily kept down by running the hoe between the rows. In the case of certain crops, such as Carrots, Parsnips, Beet, &c., which have

to stand singly at certain distances apart in the rows, it is not necessary to have a continuous line of seeds in the drill. Towards the end of the month Early Peas, Early Carrots, and Turnips, Leeks, Onions, Parsley, Parsnips, Cauliflower, Broccoli, Brussels Sprouts, Savoy Cabbage, Radish, and Lettuce can be sown, providing the weather and soil conditions are favourable.

PLANTING.—Plant shallots, Potato Onions, Onion "Sets," and transplant autumn-sown Onions if not already done. Jerusalem Artichokes can still be planted. The early varieties of Potatoes may be planted if the soil is in a suitable condition. If the soil is not in a satisfactory state, it is better to let the Potatoes remain in their sprouting boxes. Rhubarb may be divided and re-planted where it is desired to increase the roots. To produce good tender stems, liberal dressings of manure should be given. It is not advisable to remove the leaves the first year after planting.

POTATOES.—A plotholder should get new "seed" every two years at least. The best change for "seed" Potatoes is from a cold to a warmer district, or from a moist to a drier climate. My experience is that large tubers cut are better than small sets, unless the latter are immature. Sprouting the tubers before planting is especially valuable for early and second-early Potatoes. The depth to plant is from four inches to six inches according to the nature of the soil. The shallower depth being for heavy soils. You are not going to run a plough across the plot to earth the Potatoes up, so plant closer than the farmer. Plant the early varieties eight to twelve inches in the rows, and about twenty inches apart between the rows. Late varieties may be twelve inches to fifteen inches between the sets and twenty-four or twenty-six inches between the rows. There is nothing like well-decayed farmyard manure for Potatoes, supplemented with artificial manure. Apply the manure at the following rates per plot of 500 square yards:—One ton of farmyard manure, 10 lbs. sulphate of ammonia, and two stones superphosphate of lime. If no farmyard manure is available, increase the artificials by one half. Burn all the rubbish on the plot and use the resultant ashes. Coal ashes are useless as a manure, but wood ashes are especially valuable. Varieties of Potatoes can be enumerated by the hundred. One of the earliest is May Queen. The best second early is British Queen, which is a deservedly popular variety. For the main crop plant either Arran Chief, The Factor, or Irish Queen. A Potato which is rapidly growing in favour is Great Scot. It is generally classed as a second early, but is really a mid-season variety. It is also immune against the disease known as "Black Scab," or Wart Disease of Potatoes.

THE FLOWER BORDER.—Sweet Peas may be sown at the end of the month. If the ground has not already been prepared, dig a trench about one foot in depth and the same in width. Place a good layer of manure in the bottom of the trench and then cover the manure with several inches of soil. Do not sow the seeds too thickly, and, after sowing, cover the seeds with fine soil. Herbaceous plants should be lifted and transplanted. Separate the clumps with a fork and do not chop with a spade. Any vacant places in the flower border can be sown with Hardy Annuals, which can usually be procured in cheap packets from the seed-smen. Useful kinds are Cauliflower, Sweet Sultan, Mignonette, Candytuft, Virginian Stock, Godetia, and Clarkia.

G. H. O., Belfast.



March The Month's Work.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

PRUNING.—The following shrubs, which flower on the current season's growth, should now be pruned:—*Buddleia variabilis*, *Ceanothus azureus*, and its variety *Gloire de Versailles*, *Cytisus Carlieri*, *Spartium junceum*, *Hypericum Hookerianum*, and the late summer and autumn flowering *Spiræas*. Those shrubs that blossom on the previous year's growth should be pruned immediately after flowering. Other subjects that may now be pruned include Golden Yew and the variegated *Elders*. *Escallonias* often outgrow their allotted space, and when this happens they may be cut hard back. They will break freely from the old wood, and will quickly make shapely specimens again.

About the middle of the month the pruning of *Roses* may be commenced, starting with the stronger growing varieties and deferring the pruning of the more delicate *Teas* until early April.

THE ROCK GARDEN.

The soil between the plants should now be lightly stirred with a small hand fork or a pointed stick, at the same time removing all weeds, decayed leaves and other refuse. Plants that show signs of deterioration should be given a top-dressing of light, rich soil, and vacant places may now be planted up. A great many *Alpines* are easily increased by cuttings inserted in sandy soil in a cold frame or handlight, and it is always advisable to have a reserve of young plants coming on for filling gaps, especially of the better and more delicate kinds.

Annuals for bedding that should now be sown in gentle heat, or on a hotbed, include *Antirrhinums*, *Alonsoa*, *Asters*, *Salpiglossis*, *Coreopsis Drummondii*, *Arcotis*, *Stocks*, *Lobelia*, &c. They will then be ready for pricking out at 3 ins. apart in cold frames in April, although the first three kinds will do quite well if pricked out immediately into their flowering quarters, especially if the protection of a few spruce boughs be given them for a few days.

THE VEGETABLE GARDEN.

Every effort should now be made to complete the digging and preparation of the ground for the various crops. This work is very much in arrears owing to the continued wet weather, therefore it will be well to consider which of the plots and borders will be occupied first, and let these have first attention as soon as the ground is dry enough to cultivate. The first early *Potatoes* may now be planted on a warm border. These will require constant watchfulness when the young shoots push up, over which the soil should be frequently drawn up until they are earthed up to the fullest extent. If the midseason and late varieties are in sprouting boxes as recommended, there

is nothing gained by planting them before April. Sow *Peas* for succession, the variety *Gradus* being very suitable for early March sowing. After this *Peas* should be sown at fortnightly intervals, using varieties in turn which belong to the succession, main crop and late sections, as the season advances.

A further sowing of *Broad Beans* may also be made in drills drawn at 3 feet apart, sowing the seeds in a double row in the drill at 6 inches apart each way. *Parsnips* succeed best on deeply dug ground which was well manured for the preceding crop. The drills are drawn out 18 inches apart, and the seeds dropped in groups of two or three every 9 inches, afterwards thinning the young plants to one at each station.

Early *Horn Carrots* require a warm border at this date, and the shallow drills may be drawn at 9 inches apart for these small but much appreciated roots.

The main crop of *Leeks* for transplanting should be sown as early in the month as possible. They take longer than most vegetables to germinate and become large enough for transplanting, which should be done early in June.

Autumn sown *Onions* should be transplanted in lines 15 inches apart, allowing 8 inches from plant to plant in the rows. They succeed best on well-manured ground which has been dug some time previously, and are similar in this respect to the main crop of this vegetable, seed of which may now be sown when the ground is in perfect order, in shallow drills drawn at 1 foot apart. After sowing the seed tread the soil back into the drills, afterwards smoothing over the bed with the back of an iron rake.

Other seeds that may now be sown outside include early *Cauliflowers*, *Cabbage*, *Lettuce*, *Radish* and early *Milan Turnips*. The main crop of *Celery* should be germinated in gentle heat and when up removed to cool quarters, to be pricked out in rich soil in a cold frame in April, or outside, where a little protection can be given in the early stage.

THE FRUIT GARDEN.

STRAWBERRY BEDS.—These should now be cleared of weeds and dead foliage which has accumulated since the autumn cleaning. I am not an advocate of digging between the rows, as the *Strawberry* likes firm ground, but the soil may be hoed over, and in the case of two or three year old beds, a good dressing of short manure may be applied. If no suitable manure is available, give a dressing of superphosphate or bone compound at 3 ounces to the square yard, and supplement this in April with sulphate of ammonia at 2 ounces to the square yard.

The tying and training of wall fruit trees should now be completed as soon as possible, in order that the bursting buds may not receive injury during the operation.

Early flowering varieties should be given some protection on frosty nights. Light tiffany is the best material for the purpose, but a double thickness of fish-netting will answer nearly as well.

Midland and Northern Counties.

By W. ROBERTS, Gardener to Lady Emily Bury
Charleville Forest, Tullamore, King's County.

THE KITCHEN GARDEN.

THE weather conditions obtaining during this month have a great influence on the successful culture of a number of the occupants of this department for the ensuing seasons. Take, for instance, the Potato, which, however much it has been relegated to a back seat during the past, has certainly come into its own during the past three or four years, and it is invariably found that the best results are obtained from those planted under suitable weather conditions during this month; they have an opportunity of completing their growth before blight sets in, and thereby avoiding a good deal of the troublesome operations of spraying. In fact, by this method and careful attention to manure used, the danger of diseased tubers can be almost entirely eliminated, as well as enabling the ground to be cleared early and in time for other crops, a great consideration where space is limited. One is often asked the best varieties to grow for early use, &c.; this is an impossibility, as soils and conditions vary in almost every place, and the variety that may do well in one district fails in another. However, I will mention four varieties that I have found to do well over quite a large circle. First, *Midlothian Early*, an excellent cropper, as early as any I know of, and with the additional recommendation of being at all stages of growth of good table quality, which is more than can be said for a number of the early varieties on the market. Second, *British Queen*, which is almost universally good and perhaps the best garden Potato yet introduced, as it does almost equally well in partial shade, north borders, or, in fact, anywhere. My remarks *re* early sowing applies particularly to this variety, as when sown late it is invariably cut away by blight. Third, *Arran Chief*, an excellent main crop of recent introduction, a great cropper and of good type and table quality. Fourth, *Leinster Wonder*. This is, in my opinion, the best Potato introduced since the *Old Champion* for all purposes, it was raised, I think, by Mr. Williamson, of Mallow, and is practically proof against disease of any sort; a great cropper and can be had in first-class condition for almost the round of the year.

PEAS. Main crops of this favourite and delicious vegetable must also be got in if possible during this month, care being taken to give them plenty of room and a free access to light, air and sunshine. Some recommend sowing say a drill up the centre of a brake of Potatoes, and which, no doubt, has much in its favour, but it will usually be found that where this method is adopted the Potatoes or other crop either side of the row will suffer considerably from the amount of traffic, staking, picking, &c.; where one can spare it a plot devoted entirely to them will prove the better way, and by having the rows not less than six feet apart a row of Spinach, Turnips, Lettuce, &c., can be sown between with good results. I do not care to recommend Brussels Sprouts, Kale, or anything likely to run in long after the Peas are cleared away, as they interfere with the proper cultivation of the plot, and are better, where possible, put in a brake by themselves.

ONIONS.—According to our old teachers these, if not sown before the 15th, will almost certainly prove a failure. Whether they had anything in their minds concerning the probable condition of affairs on and after that date I do not know; any-

way it was and is by no means a bad rule. They can be sown either in beds or drills; the latter is, I think, the easier to keep clean. Thorough preparation of the ground is of paramount importance, and more than any other vegetable crop, they will permit of no short cuts in this respect. A fine and level surface made as prim as possible by either treading or rolling, the latter only where the soil is perfectly dry, otherwise it will be inclined to cake, is required for the seed, which may be sown, in drills, from 12 to 18 inches apart according to size of bulbs required, and about 1½ inches in depth. If sown broadcast they may be covered somewhat lighter by the soil out of the alleys, or by any other fine compost. Mildew, &c., has become very prevalent of late years, and the only remedy so far as I know is frequent dustings of lime, sulphur or soot while the dew is on the plants.

Full crops of Broad Beans, both Windsor and Long Pod, Broccoli, Cabbage, Leeks, Cos and Cabbage Lettuce, Savoy and Winter Greens of all kinds may be sown now on the first favourable opportunity. Plant out Cauliflowers from frames or shelters towards the end of the month, and see that they do not suffer from drought, also Cabbage and Lettuce raised under cover, but where the conditions are at all unfavourable defer until next month.

FRUIT GARDEN AND HOUSES.

Late vineries may now be closed as soon as they show signs of activity, attending to damping the floors, &c., during sunny days. Some advise syringing the canes regularly, but this is a matter of very old debate, and, if I remember right, those that engaged in it on both sides came to the conclusion that you could do it if you liked, but that it made no difference "whether or which," so that it is largely a matter of time and labour. Early Vines and Peaches will require usual attention, care being taken to adopt a reasonable attitude *re* temperatures, by which I mean avoid extremes and study the outside weather conditions, as cold winds, &c.

FLOWER GARDEN, LAWNS, &c.

Now that almost everything in the herbaceous shrubbery borders is peeping or over ground it is a very good time to reduce the various clumps to suitable dimensions, and the pieces taken off can be either used to make up gaps or put in nursery beds, where they will supply rough cut flowers instead of disfiguring the borders. The rose garden will also require attention in the way of pruning, manuring, &c. The former operation will be governed by the class of flowers required, and in a lesser manner the latter also. The shrubbery borders will by now begin to brighten up considerably, and require to be kept clean and neat so as they may look their best at which is probably their most interesting period. There has undoubtedly been an enormous improvement in this section of late years, and evidently more to come.

All lawns, and short grass generally, will require attention now in the way of scarifying, rolling, and, where very forward, mowing. In favoured districts seed may be sown on bare patches towards the end of the month, but generally it is better to defer until next. Advantage may be taken of putting the mowing machines into running order and providing stakes for border subjects likely to require such, and during harsh, drying winds attend to any gravel sweeps or walks either with horse scuffle or hand, as a good withering at this time saves a lot of time later.

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Irish Gardening

Contents

	PAGE	Notes-- <i>continued</i>	PAGE
Food Production—Runner Beans	49	Colchicum crociflorum	55
Cinerarias (Illustrated)	50	Primula chasmophila	55
Plants for Shady Places	51	Primulas for the Garden (Illustrated)	55
Pine Weevil (<i>Hylobius abietis</i>)	51	The Editor's Table	58
Grape Vine, <i>Vitis vinifera</i>	52	Early Flowering Rhododendrons	58
Manuring of Fruit Trees and Bushes	53	Amateur Fern Growing	59
The Fruit Industry	54	Allotments	62
The Rock Garden	54	The Month's Work—	
The Gromwells	54	Southern and Western Counties	63
Notes—		Midland and Northern Counties	64
Fritillaria askabadensis	55	Royal Horticultural and Arboricultural	
Scilla sibirica multiflora	55	Society of Ireland	64



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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE

VOLUME XIV
No. 158

ADVANCEMENT OF HORTICULTURE AND

APRIL
1919

ARBORICULTURE IN IRELAND

EDITOR—J. W. BESANT.

Food Production.

RUNNER BEANS



WHEN one takes into consideration its many and various attributes, it is not surprising that this vegetable should enjoy such popularity as it usually does.

It certainly is one of the choicest of our summer and early autumn vegetables, and with many, I think, takes precedence to Peas. It is not my intention to go thoroughly into the details of cultivation, but merely to touch upon some of the more salient features and reasons, with a view to further popularising this crop amongst amateurs who may not be altogether too familiar with its cultivation.

First and foremost, I think it can safely be said that no vegetable gives greater returns for the space the crop occupies than does the subject of this note, and this alone should ensure its inclusion in all gardens.

It is, of course, perhaps a difficult matter for some to obtain stakes or rods for the proper support of the growth, but if properly utilised this is not such a serious item as many imagine, and with care will last for several seasons. A row of Runner Beans well grown will provide abundance of produce from the time the earliest flowers set and gain sufficient size for picking until frost puts an end to them in the autumn, and unfortunately it is one of the first crops to suffer in that respect.

With good cultivation the line will easily cover a height of twelve feet or more, for which there is no rent to pay, and, furthermore, when grown in a row across the garden provides shade to other crops, which is beneficial of a hot, dry summer. Where more than one line is grown they should not be closer together than the

height of the stakes, and, where possible, the farther the better.

Apart from its utility, it is also one of the handsomest of our kitchen garden crops, and especially the scarlet flowered variety.

The white flowered Bean is just as prolific, and equally as good productively, but not quite so showy. During such times as these it might well be grown in clumps at the back of the flower borders if space does not permit elsewhere, and the plants staked as for Sweet Peas. For covering arbours or screens, except in very unfavourable situations and soil, it might well be used, and to encourage free growth against galvanised or iron supports a few thin sticks just strong enough to carry the growth until it becomes vigorous may be tied on near the base.

As might be imagined, the plant is a gross feeder, and, therefore, the ground which the plants are to occupy should be well dug and liberally enriched with manure. When grown in lines it is the usual practice to take out a trench as is done for other vegetables, as, for example, Celery and Peas, leaving a slight depression when finished off to admit of soakings of water should the weather be dry. If grown in clumps the soil may be removed a yard or so in diameter, and manure added in a similar manner. When grown in this manner staking need not be so effectively done as for a row, as there is less resistance to wind, and long pea boughs well thrust into the ground and tied round with stout twine or cord will answer admirably, and for a small household this practice has much to recommend it. Seed may be sown direct into the open ground during the present month, or, better still, fill some four or five inch pots with some old potting soil, or



Photo by DWARF STAR CINERARIA *J. B. Slater.*

ordinary garden soil will do, and sow one seed in each, and stand in a cold frame or greenhouse, and give a thorough soaking with a rose can and protect from mice and rats. Failing pots, sow in boxes about two inches apart all ways, and plant out when a foot or so of growth is made. A rough idea of the number that will be required can easily be obtained. If for a straight line a double row is usually planted at one foot apart each way. If for a clump, five plants at the same distance.

With care in planting, very few failures will result, and an odd plant or two kept in reserve for a time will fill any gaps which may unavoidably occur. It is much to be preferred to sowing in the open ground, as the young plants, when pushing through, run much chance of injury from slugs and other pests, and a distinct gain is also assured in earliness. Before planting out thoroughly well water some little time beforehand, so that the balls of soil are moist, and if the weather is dry well water in and encourage growth by damping overhead when the sun's rays are declining. Whether sown or planted, dust with soot or lime, or place a ring of sharp cinder ashes round each plant as a protection from slugs, and if planted out of pots have them thoroughly hardened off.

The earliest trusses of bloom sometimes fail to set, especially if the weather is very dry. A slight damping with the garden syringe will often correct this.

The Beans should not be picked too young or

small, as that is only waste. Good specimens will be a foot or so in length, and providing they snap clean in two are quite fit for any table.

Always pick the oldest produce, as any beans left to pod and mature seed considerably drain the energies of the plants.

Especially should the bottom of the rows be carefully searched. Plants raised in pots, and perhaps somewhat pot-bound, when planted out bear quite close to the ground.

During dry weather the rows may be mulched with strawy litter or some other light protective material to conserve the moisture in the ground, which is also greatly added to by the frequent loosening of the surface soil with the Dutch hoe and the formation of a fine loose surface.

At the end of the season, when frost threatens, look over the rows and pick everything that is large enough to handle for picking.

Surplus beans not required for immediate use may be cut up and placed in salt, and when properly rinsed and cooked make a very agreeable winter vegetable, when variety is none too plentiful.

E. B.

Cinerarias.

Few greenhouse plants are more attractive and useful than Cinerarias, and the improvement made in the size and colouring of the flowers has led to great popularity.

Seeds should be sown early in May for early plants and in June for succession. A shallow pan is suitable, and should be well drained; the soil suitable for sowing the seeds is one part loam, two parts leaf-mould, and sufficient sand to keep it open. Cover the pan with a sheet of glass and a sheet of paper, and place in a shady position in a temperature of about 55°. When the seedlings appear expose them to light, but shade from hot sunshine. Prick off the seedlings into three-inch pots. Use similar soil with the addition of a little well-decayed manure and broken charcoal. Keep the plants near the glass in a cold frame with a north aspect. As Cinerarias are quick-growing and free-rooting plants they should be removed into larger pots before they get pot-bound. Plants may be flowered in any size pot from 5 inches to 10 inches. Give the plants plenty of room after the final potting, and stand on a good bed of ashes in the frame.

In all stages of growth watering must be carefully attended to. A gentle syringing once a day over the foliage is beneficial in hot weather.

Weak liquid manure, soot water and occasional top-dressing of an approved fertiliser may be given when the pots are full of roots.

When frosts occur in the autumn remove the plants to the greenhouse, having a temperature of 50°. Air should be given on favourable occasions, and great care should be taken in the watering during the winter months to prevent the plants from damping off at the base. On the first appearance of green-fly the house should be fumigated. Sometimes the leaves are disfigured by the leaf-mining grub. Its presence is betrayed by a yellow streak, and the best remedy is to kill the grub by squeezing it between the thumb and finger. The photo enclosed is a fine specimen of a 9-inch pot of the Dwarf Star Cineraria, pale blue colour.

ANGUS SLATER.

16th February, 1919.

Plants for Shady Places.

THE interesting article by "Gardener," on page 38 of your last issue makes no mention of *Griselinia littoralis*.

This highly ornamental New Zealand ever-green shrub is, in my experience, one of the best plants for the purpose, and a welcome change from the eternal acuba and common laurel. In most parts of Ireland it grows freely, and is as easily propagated as either of the above far too much planted shrubs. Having regard to its free growth and ornamental character, it is surprising that it is not more used for general planting.

For planting in shade, strong, well-established plants should be used, and the roots thoroughly soaked with water two or three times during the first season. R. A.

Pine Weevil (*Hylobius abietis*).

My experience with this pest, read in conjunction with Mr. Duchesne's article in the *Quarterly Journal of Forestry*, April, 1918, may be of interest.

In 1916 and 1917 I dressed the stumps of freshly-fallen resinous trees, in April, with tar on a small scale, and found from positive and negative results that it was a certain remedy. By negative results I mean that by carelessness in certain places stumps had been passed over and not tarred.

In these localities, and in no others, I found the Weevil at work. In January, 1918, about one and a half acres was cleared, and planted in February with specimen trees of the different varieties of *Pinus* and their nurses. My forebears had used the outside line of trees of the old planting as posts for fixing a wire fence.

Consequently, the timber fellers cut these trees, say, 3 feet 6 inches from the ground.

There were hard woods, silver fir and three Scotch firs; unfortunately, for experience, there did not happen to be either a larch or a spruce treated in this barbaric fashion. In April I ordered the resinous stumps to be tarred, and, luckily, happened to visit the operation at the moment when all the stumps were done except the ones standing 3 feet 6 inches over the ground.

Owing to scarcity of tar, the operator asked me if he should tar these standing stumps all over or only on the top.

I thought that I would save time by stripping the bark off them, and went and got a small hatchet.

I found, on stripping the first Scotch fir, millions of grubs of the Pine Weevil under the bark, literally the whole 3 feet 6 inches right down to the ground was tunnelled with these pests.

I had fires lighted and burnt all the bark and the grubs, and lighted fires round the stumps, and had them tarred afterwards.

The other two Scotch firs were the same, but there was not a single grub in the silver firs.

I then examined the stumps which had been cut to the ground, perhaps thirty of them, and found, on stripping them of bark, that there were no grubs in these.

In the one and a half acres during the summer I picked off about half a dozen Weevils, and no damage was done.

I advance, as a useful experiment, that a couple of Scotch firs per acre should be cut high and left as traps.

My idea is that the beetle finds an easy and dry place to lay its eggs in these standing stumps, or else that they are easy to find—or, for some reason, they will select perpendicular



PRIMULA CHASMOPHILA.

See page 55.

high stumps in preference to shrubs cut level with the ground.

Mr. Duchesne mentions, and my experience now shows that it is only necessary to tar the outside top of the stump where the bark joins the wood, or rather the cambium.

February 24th.

HUM BLAND.

LETTERS RECEIVED BY MR. HUM BLAND REGARDING
THE TARRING OF STUMPS AS A CURE FOR THIS
PEST.

DEAR SIR,—I have received instructions from the Marquis of Headfort to give you my experience in dealing with the Pine Weevil. Some years ago a plantation was cut down and re-planted with young trees, which consist of Scotch Fir, Larch, Douglas, and Sitka Spruce. The young trees were very badly attacked by the Weevil. The attack was more severe on the Scotch Fir than on any of the other varieties. Last year another plantation was cut down and re-planted, the young trees consisting of Larch, Douglas, Silver and Spruce; but before the latter plantation was made his lordship had the bare roots and stumps of the old trees that were cut down, well cleaned and tarred, with the result that there was no trouble with this plantation. I believe the Weevils harbour and lay their eggs under the loose bark and in crevices in the old stumps. I also believe that the tarring does away with them and also with their eggs.—Virginia Park, Co. Cavan, 12th March, 1919.

SIR,—Lord Headfort has told me to give you particulars about the Pine Weevil and the damage done by it. In 1902 I planted five acres with Larch and Scotch Fir. The Weevil that year was very bad on the young trees, as the stumps were not tarred, and I had to plant a third time. In 1914 I planted thirteen acres without tarring; most of the stumps were Spruce and Larch, and the Weevil was very bad on these young trees also. I planted six acres in 1918; the stumps were a mixed lot of Scotch, Larch, and Spruce; but they were all tarred, with good results, as very few of the Weevils were seen, and no damage done on that six acres. I think the Scotch Fir stumps are most subject to the Weevil, and more so when a tree is uprooted and goes back; it is then loose below for the Weevil to work.—The Lodge, Virginia, Co. Cavan, 10th March, 1919.

Grape Vine, *Vitis vinifera*.

(ORDER—AMPELIDEAE.)

Propagated from seeds for new varieties, also from layers, cuttings, eyes, and inarching, budding and grafting.

Eyes or Buds; General Method.—The bud, with half an inch of well ripened wood, must be taken off the previous year's growth; slice away one quarter of cane on the opposite side to bud and insert in good soil in well drained 3-inch pots by making a small hole in centre of sand and pressing bud in so as to be level with the surface of the soil. Plunge pots in bottom heat, 75° to 85°, and when full of roots re-pot as required.

Bottle Grafting affords a ready means for

changing and improving unsuitable varieties. The scion must be well ripened, fresh but dormant. When the stock has made leaf take a slice off scion near the centre four inches long, forming a tongue with a cut upwards. Now take a slice of stock similar to cut on scion, making a cut downwards to admit tongue, and then fit cut parts exactly and bind together, placing the lower end of scion in a bottle of rain water.

Preparation of Border.—Low lying situation with damp subsoil should be avoided. Best situation is where the ground is drained naturally. One foot of drainage made up of broken bricks is necessary.

Soil.—Fibry, calcareous, yellow loam, the top spit from old pasture, four inches thick, and, if possible, where sheep have been penned and fed on oil-cake. This, chopped into rough pieces, with the addition of lime rubbish, wood ashes and half-inch bones modified according to the character of loam, will constitute the main body of soil. Top dressing of border must be annually attended to and never allowed to become dry.

Planting.—Ripened canes plant in September and October. Shorten canes to proper length before January.

Training.—Long rod or the method of providing well-ripened canes in one season for fruiting, the next afterwards cutting away; others being in readiness, and so on, from year to year.

Extension System or General Method.—The Vine is allowed to extend its rods until it fills a large house, or may have only one or two rods, which are spur pruned. When old rods become long in the spur, young rods should be trained in from the base, cutting away old spurs as the young rod advances.

Pruning should be done at the fall of leaf. Free fruiting varieties prune back to one eye. Slow fruiting varieties prune back to two eyes. At this period (resting) the viney should be cleaned and air admitted freely. When starting into growth temperature must be increased gradually.

Sweet-water Grapes take five months from starting to ripen fruit.

Muscats and late Grapes take six months from starting to ripen fruit.

Moisture.—Syringing should be practised twice daily in bright weather until flowering; afterwards damp paths and surfaces for creating moisture. Always damp immediately after closing. As soon as the best bunches can be seen rub off all growth not required, and when two leaves are formed beyond the bunch, pinch out point of shoot and rub out axillary growth below bunch stopping all sub-laterals beyond bunch to one leaf.

Shoots must be tied to wires before they touch the glass *very carefully*, as they are brittle and apt to pull out at joint.

Flowering.—At this period a moderately dry atmosphere with a circulation of air is necessary. When flowers are throwing off the "cap" rap all bearing shoots about mid day to disperse pollen to shy setters. This may be done by mounting a rabbit's tail on a stick, and obtaining the pollen from another variety.

Muscats and shy setters require about five degrees more temperature (night 70 degrees, day 80 degrees to 85 degrees) than Black Hamburgs when flowering.

Thinning is performed when berries are about the size of a small Pea, cutting away all surplus bunches. One pound per foot of rod is a good crop. Never grow small fruits of any kind, as the

formation of stones (seeds) weakens the plant more than the formation of pulp.

The colour of berries when ripe will greatly depend on the amount of chlorophyll formed in leaves from the period of unfolding buds. Late grapes for keeping are best cut with all the wood that can be spared, and placed in a cool room with the lower end of wood in a bottle of rain water, in which has been placed a few lumps of charcoal. The bunches should hang clear from bottles.

Manuring of Fruit Trees and Bushes.

THE question of manures is one of food—food for plants. On examination it will be found that plants feed in two principal ways. By means of their roots they take in various necessary substances in dilute solution with water; while through their aerial parts they take in air, from which the green parts are able, under the influence of light, to take hold of its contained carbon, and build from it with the soil solution previously



PRIMULA JAPONICA ALBA.

In the Bog Garden, Royal Botanic Gardens, Glasnevin.

Varieties.—Black Hamburg, Buckland's Sweet-water, Madresfield Court, Lady Downes, Muscat of Alexandria, &c.

Enemies to Grape Vine.—Mildew, Shanking Root-Rot, Mealy Bug, Red Spider and Thrips.

Remedies for Mildew.—Paint the hot-water pipes with sulphur made into a paste with water. Get the pipes hot and shut the house up for a night. Avoid cold draughts.

Shanking—*i.e.*, the shrivelling of the foot-stalks of the berries—is brought about through the roots being in cold subsoil. Keep the roots under control.

Mealy Bug.—To keep it out wash the canes well in winter with Gishurst Compound.

Red Spider.—Dusting the affected parts with flowers of sulphur.

Thrips.—Fumigate the house lightly.

ANGUS SLATER.

Feb. 15, 1919.

absorbed, various complex substances, which are afterwards used up or stored in different parts of the plant. On further examination we find that a number of the necessary soil substances are present in most soils in sufficient quantity for garden crops, and that only about three or four of them, at most, need be applied to soils in order to obtain vigorous and fruitful growth. These substances are called nitrogen, phosphorous and potassium respectively, but as they are not found as elements in the soil water, but as compounds, they are often referred to as nitrates, phosphates and potash. The fourth substance which is particularly necessary for stone fruits is lime. It may be asked what is the particular function of these various substances in the nutrition of plants, a question easier asked than answered. By experiment scientists have proved that if any one of the necessary elements are absent or lacking that growth and development

are checked. Of the four principal substances it would seem that nitrogen is particularly necessary where luxuriant and sappy growth is desired, and that when used in excess, just as when too much water is given, the plants become over sappy and long-jointed and are easily affected by pests and disease, or by injury due to bruises—rubbing, &c.; and also that when nitrogen is used to excess the plants are slower in reaching maturity. Phosphates, on the other hand, appear to have a slowing down and consolidating effect, tending to hasten maturity and the production of fruits and flowers, stimulating the production of roots and root fibres, and raising the quality of fruits formed.

The effects of *Potash*, while not so marked as the others, probably because most soils, with the exception of poor sands seem to have a fair quota, is again different. It would seem, first of all, that where food is being stored up, either in stem, root, leaf or fruit, that the presence of a sufficient supply has a very marked effect. It would seem as if when potash is lacking, or slightly so, that the plant is not able to do successful work in its green parts, or, *i.e.*, transfer the food which has been elaborated from one part of the plant to the other. Leaves, flowers and fruits appear, also, to lose their characteristic brightness of colour where potash is lacking, while the flowers are often less fertile. Plants are apparently more healthy and able to resist disease and pests better when fully supplied with potash.

Lime is of greater value for its sweetening or sanitary effect in the soil, also for its chemical action on other soil compounds, than for its direct feeding value. It is, however, particularly necessary as a food for stone fruits, as the stone is largely made up of calcium carbonate or "lime" as we gardeners know it. It appears also to act as a stimulant to root action, to increase the vigour of plants, and acts as a tonic generally, just as quinine does to some patients. It will be seen, therefore, that the question of manures is one requiring careful consideration, not only from the points of view enumerated above, but also in relation to soil conditions, whether containing sufficient air, sufficient water, sufficient lime, &c. W. H. J.

(To be continued.)

The Fruit Industry.

ARRIVAL OF APPLES FROM BRITISH COLUMBIA.

THREE thousand boxes of apples have arrived in England from British Columbia during the last few days, including Jonathans, Wine Saps, Newtons, Spitzenbergs and Rome Beauties.

Samples are now being exhibited in the windows of British Columbia House, Regent Street, and at the offices of the Canadian Pacific Railway, Charing Cross.

These Apples, grown in the Okanagan district of British Columbia, are the finest that have been seen in England for many years. In most cases there are only from 52 to 55 Apples to a box, where ordinarily there are 100 to 150.

The Rock Garden.

EARLY March produced many signs of spring in the rock garden. Species of Crocuses, some previously alluded to, proved their value for an early display. *Crocus chrysanthus* Canary Bird will bear mention again for, from a small clump, the number of

golden yellow flowers produced has been truly amazing, and the length of time during which they continue to push up is no less wonderful.

C. Tommasinianus has also kept on producing its pale lavender flowers in great profusion. This species is making itself thoroughly at home in the rockery, seeding about everywhere, and coming up even by the sides of the hard paths. One hopes that others may do likewise.

Scilla bifolia rosea makes a welcome patch of colour, and is satisfactory in its healthy growth. The colour leaves something to be desired, as there is just a hint in it that all the blue of the type has not been got rid of; nevertheless, it flowers at a time when there are not many "pinks" or "roses" on the rockery.

Chionodoxa Lucillae var. *Sardensis* attracts every one; the clear blue of the flowers appeals to all, and seems like a harbinger of Gentian days to come.

Tulipa Kaufmanniana is a wonderful tulip of March, so hardy and so free-flowering, bearing abundantly its pale, yellow flowers which open wide in the sun, like water lilies. *T. K. coccinea* is a variety of a fine orange red colour, and flowers about the same time.

Anemone blanda began to flower early in March and towards the middle of the month was beginning to make a display. The two varieties *alba* and *Seythinea* were in advance of the commoner blue form.

Saxifraga burseriana Emperor flowered well in a granite moraine, and *Magna* was out at the same time. A tuft of major which is usually good, this year only gave a flower or two. A six inch pan of *S. burseriana tridentata* has been carrying scores of fine large pure white flowers on reddish stems, and was a beautiful object in the Alpine House. The same may be said of *S. X. Irvingi*, the beautiful hybrid named after Mr. Irving, of Kew. A six inch pan of this beautiful plant was literally covered with pale pink, short stemmed flowers, so that scarcely a leaf could be seen. It is doing well on the rock garden and is just coming into flower, but will probably be over ere these notes appear.

Iris Rosenbachiana in a sunny border in deep loam continues to flourish, and has flowered lately. It is one of the most satisfactory of the stemless *Juno* Irises, and the reddish purple flowers variously marked are most attractive.

L. Tubergeniana flowered in the same position, and belongs to the dwarf *Juno* set. The flowers in this case are pale yellow, and bear a narrow beard or crest, of a deeper shade, on the falls.

The Gromwells.

I AM obliged to my informant about the distinction between *Moltkia petraea* and *Lithospermum rosmarinifolium*. There seems to be some ambiguity about the nomenclature, for in the Kew Hand List of Herbaceous Plants, 1902, *Lithospermum rosmarinifolium* is not mentioned, and in the Hand List of Trees and Shrubs of the same year the name is given as a synonym of *Moltkia petraea*.

Monreith.

HERBERT MAXWELL.

[The omission of *L. rosmarinifolium* from the Kew List of Herbaceous Plants may be due to it not being hardy at Kew, or they may consider it a shrub. In the List of Trees and Shrubs, *L. rosmarinifolium* of Reichenbach is correctly given as a synonym of *Moltkia petraea*, but the authority for the true *L. rosmarinifolium* is Tenore.—Ed.]

Notes.

Fritillaria askabadensis.

THIS interesting and satisfactory species from the Caucasus is the tallest herbaceous plant in flower thus early in the year. Its rate of growth is remarkable; from the time the shoots push through the soil, but a few weeks elapse ere the stems are over two feet high, bearing a head of pendulous pale yellow flowers on long, slender stalks. The leaves are long and narrow, scattered irregularly on the stem, and of a bright, shining green. It was in flower from the middle of March, and is perfectly hardy.

Scilla sibirica multiflora.

THIS variety is distinct from the common form in the longer spikes, carrying more flowers, and usually blooms earlier, though growing side by side in the same soil and situation. It is a useful plant for the rock garden, and the front of a border as well as many little nooks and odd corners where early flowers are welcome in the opening months of the year.

Colchicum crociflorum.

AN interesting spring flowering *Colchicum*, sharing this distinction with *C. luteum*, which comes from Kashmir and Afghanistan.

C. crociflorum, flowering now in the middle of March, bears small flowers, pure white within, but each segment has a narrow strip of brownish colour running down the centre on the outside. Well-drained soil and a sunny position is necessary for both these species. *C. luteum* has flowers of a golden yellow colour, and is not very common.

Primula chasmophila.

THIS pretty Primrose, lately introduced to cultivation, is figured in the *Botanical Magazine* at plate 8791.

The figure was prepared from a plant which flowered in the Royal Botanic Gardens, Glasnevin. The seeds were sent to Glasnevin by Mr. A. K. Bulley, of Neston, Cheshire, and were collected for him in Bhutan by Mr. Cooper.

The species was named by Professor Balfour, of Edinburgh. It belongs to the section *Soldanelloides*, and bears two to three flowers clustered together at the summit of a scape about three inches high; the flowers are deep violet in colour, with a pronounced mushroom-like odour. The leaves, all basal, are hairy, an inch or little more in length and half as wide, distinctly stalked, and with lobed margins.

It occurs at an altitude of 16,000 feet in dry, stony soil, in sunny positions. Under cultivation it has the same fault as so many other species from the same region—it is difficult to keep through our damp winters, and is not likely to be a success in the open.

J. W. B., Glasnevin.

Primulas for the Garden.

GARDENERS, and particularly those interested in outdoor gardening, are fortunate in the enormous number of *Primulas* now available with which they may embellish their rock gardens, bog gardens and borders. From Europe, from Asia and from America they come, and a very large proportion of them are amenable to outdoor cultivation. Of the newer introductions there are some which perhaps we do not quite understand, particularly as to whether they are truly perennial or not, or whether they like lime or the reverse, but half the interest in growing plants is in discovering their habits and requirements, and enough is known of many of them to make it worth while persevering to find out the right treatment.

In spite of the many new introductions from China many of the old favourites are still in the front rank and will not be easily ousted. As a matter of fact there is not much to beat our common Primrose, *Primula vulgaris*, clothing a shady bank or hedge side, and opening its ever welcome flowers so early in the year. There is a handsome large-flowered form of the common Primrose called Evelyn Arkwright, which is well worth growing. The Oxlip *Primula elatior* and the Cowslip *Primula officinalis* are both delightful species worth growing in our gardens, and flourish in ordinary loamy soil. The dainty little *Primula farinosa* is the type of a section which includes also *Primula Scotica*, a little gem growing wild in the very north of Scotland, and *P. frondosa* from the Balkans. All like moist soil with a mixture of peat and a half-shady position. Of the three, *P. Scotica* is the most difficult to keep; *P. frondosa* is quite accommodating and flowers freely every year, bearing quantities of its dainty, rosy, purple flowers held above the rosettes of mealy leaves; it responds to dividing and replanting annually after flowering. *P. farinosa*, known also as the Bird's Eye Primrose, is smaller, with lilac flowers; each with a yellow "eye," the variety *magellanica* has flowers of a bluer shade.

To the *Auricula* section belong most of the older species best known in gardens, and which are found wild in the mountainous regions of Europe. The names of many of them have been much confused and are far from right still in gardens and nurseries, though botanists and those who have made a special study of European *Primulas* have done much to bring order out of chaos.

Primula Auricula is a variable species, and it is doubtful if the true wild plant is very often met with in gardens and nurseries. It apparently responds to cultivation in growing to a larger size and in producing larger flowers, but, in any case, the best forms met with in gardens are decidedly worth having. The flowers are yellow and the leaves often mealy, but sometimes not. The Munich form is a pretty and fairly easily grown plant rejoicing in loamy soil with lime in it; it is known as *P. Auricula monacensis*, and has narrower leaves than the commoner forms of *Auricula*, and heads of slender, yellow flowers. The pretty, yellow-flowered *P. Obristii* is also considered a variety of *P. Auricula*, as also are *P. Ballisii*, with large yellow flowers and green leaves, and *P. bellunensis*, also yellow, both being grouped under *P. Auricula* var. *ciliata*. Another yellow-flowered species of the *Auricula* group is *P. Palinuri* from Southern Italy. It has large

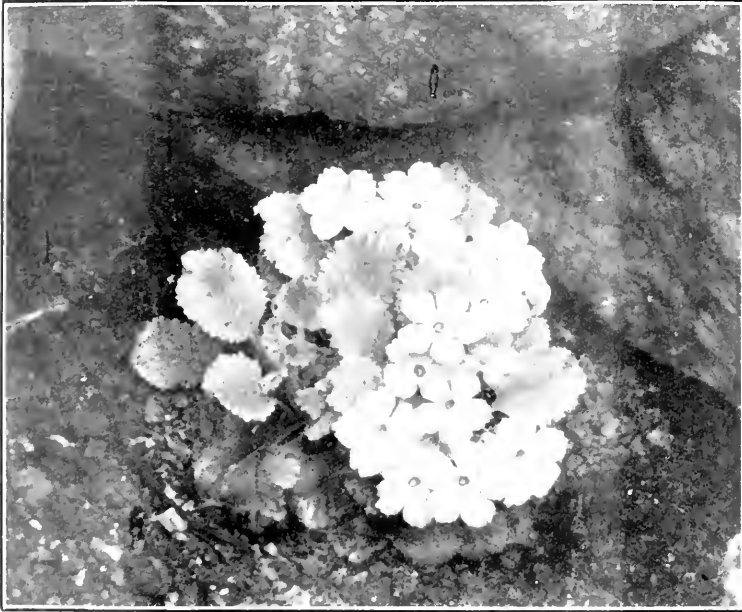
ample leaves of a bright green colour and forms a woody rootstock. The flowers are of a deep golden yellow borne in an umbel on a tall scape held well above the foliage. When doing well this is a handsome species and likes a rich loamy soil and sun. For years a good clump flourished in a sunny border in the Botanic Gardens at Glasnevin, in deep soil, receiving an annual top-dressing of sand, peat and leaf-mould. It will do equally well on the rock garden given similar conditions.

P. marginata is one of the most charming of the species related to *P. Auricula*, and in one form or another is to be found in most gardens where alpinæ are grown. The ornamental character of

small rosette of smooth, green leaves and produces a flower scape from six to eight inches high, bearing at its summit numerous lilac flowers each with a conspicuous white "eye."

P. viscosa is much confused with *P. hirsuta*, and it is probable that most of the *Primulas* grown in gardens as *P. viscosa* are really forms of *hirsuta*. One form of *P. viscosa* which seems generally correct is *P. viscosa* var. *cynoglossifolia*, but although placed with others of similar habit on the rock garden at Glasnevin it has failed more than once to become established.

There is a group of European *Primulas* with comparatively small, rather stiff, smooth leaves, which contains some of the prettiest species, and



PRIMULA WINTERI
In the Rock Garden, Glasnevin.

the leaves is in itself sufficient attraction, but the flowers produced in March and April are also beautiful. The leaves are prettily serrated along their margins and furnished below with a mealy powder, which shows on the margins from above. The flowers vary in size and colour, some being pale lilac and others of an almost violet shade; the best form known to the writer is that called *Linda Pope*, which has handsome broad leaves and heads of large flowers deep lilac in colour. *P. marginata alba* is not of much decorative value, not being pure white.

P. marginata is easily grown in gritty loam and leafsoil, in a half-shady position. When the stems become long and bare the plants should be lifted after flowering and replanted down to the leaves, and an annual top-dressing of loam and leaf-soil is beneficial. *P. carniolica*, from South Austria, is a lovely species and grows well in conditions that suit *P. marginata*. It forms a

they are generally easy to manage. *P. spectabilis* forms a rosette of smooth, stiff leaves, somewhat viscid and fairly broad in comparison to their length. The flower scape grows some four or five inches high, bearing several delightful rosy mauve flowers; loam, leafsoil and sharp grit suits it, and a half-shady position. *P. glaucescens*, often grown as *P. calycina*, is an attractive species, and was well shown in Dublin some years ago by the late Tully Nurseries. From rosettes of smooth, grey-green leaves arise the rather short flower scapes carrying several fairly large flowers, which, in the best form, are of a fine rose colour. *P. longobarda* is also grown at Glasnevin; it is similar to but smaller than *glaucescens* and was classed by Pax as a sub-species of *P. spectabilis*, but by others is considered a variety of the former.

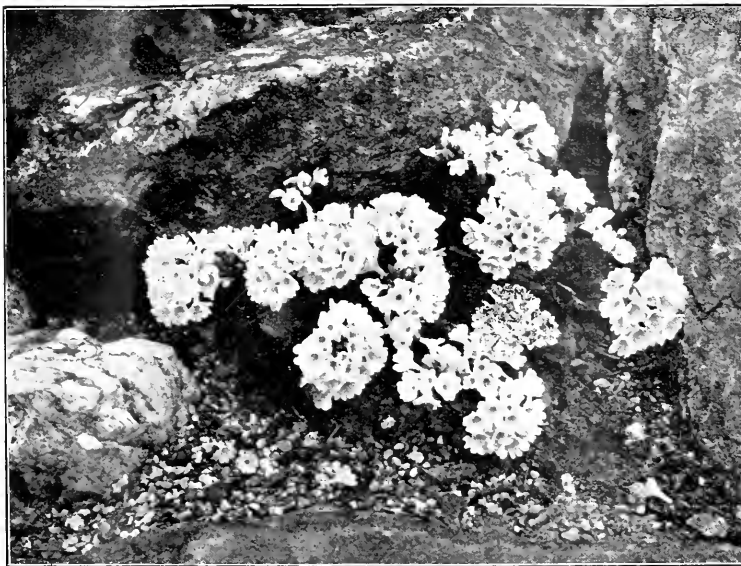
P. Wulfeniana, from the Austrian Alps, is a good doer, and does not object to a fair amount of sun.

The leaves are comparatively short, stiff, smooth and sharp pointed. The flower scape, three to four inches or less high, carries one or two deep rose-coloured flowers.

P. clusiana, from the same region, also flourishes in gritty loam and half shade. The leaves are smooth, light green, with cartilaginous margins, which are also ciliated; the flower scape, some four or five inches high, bears several fairly large rose-coloured flowers. Certain species of the *Auricula* section are distinguished by having the leaves and often the flower scapes furnished with glands which give off a somewhat sticky, reddish fluid. Among others *P. pedemontana* is to be met with in gardens, and bears above the rosettes

other forms are white or pale pink, and some have rather small flowers. The delightful plant known as *P. pubescens alba* is apparently to be considered a form of *P. hirsuta*, as also are *ciliata superba*, a magnificent variety with large violet-coloured flowers, and *ciliata purpurea*, Mrs. J. H. Walker and the now popular variety "The General."

P. integrifolia belongs to the section with colourless glands and is not too common in gardens though fairly easy to grow. It has been described as free flowering, but this is not our experience at Glasnevin, where it has been grown in a granite moraine, and certainly increased but never flowered freely. It bears, rather sparingly,



PRIMULA PUBESCENS ALBA.

of glandular leaves umbels of rosy purple flowers often with a white "eye."

P. œnensis, also known as *daenensis*, comes from the high Alps of the South Tyrol. The leaves, like others in this section, are sticky, and the flowers, carried in umbels, are rose-coloured, each with a white centre.

P. villosa is a pretty plant with glandular leaves and short flower scapes surmounted by one or two pale rose-coloured flowers.

P. commutata is also in cultivation and resembles the above species, and is, in fact, now looked upon as a variety; flowers bright rose.

P. cotta is an interesting little plant, sticky in all its parts, and bearing umbels of rose-coloured flowers.

P. hirsuta is one of the best and showiest species for the garden and is frequently offered as *P. viscosa*, from which it differs in the smaller leaves, which are also furnished with reddish glands, and in the shorter flower scape. The best forms have large rose-coloured flowers, but

lilac or purplish rose-coloured flowers on rather short scapes.

P. Allioni is a dainty gem but not too amenable to cultivation on the rockery. Some years ago the late Mr. Ball collected several plants in Northern Italy, and grown in pots they have flourished and even increased, so that division could be carried out, but when planted in various positions on the rock garden they nearly always perish or become poor and weak during winter. For the Alpine house this is an interesting little plant forming rosettes of small green glandular leaves, and bearing on a very short scape several comparatively large, pale pink flowers, each with a white "eye."

P. tyrolensis is a pretty species with green leaves, glandular, as in the others of this section, and bearing one or two large rose-coloured flowers on short scapes.

P. deorum, from Bulgaria, of which the late Mr. Ball also collected specimens in that country, grew for some years in the bog garden at Glas-

nevin but finally vanished, and it has since been tried in a moraine without success. It flourishes, or used to, in the O'Mahony's garden on the Wicklow mountains, and appears to like a stony medium with plenty of moisture below. The rather thick, lance-shaped leaves are surmounted by a one-sided umbel of violet-coloured flowers. *P. glutinosa*, also cultivated at Glasnevin, grows well enough in a pot, but is less happy out. The flowers are described as blue-purple, but I cannot remember having seen them.

P. minima, the so called Fairy Primrose, was also brought from Bulgaria, and flourished for a time, but latterly failed to do so well. It was planted in gritty soil in half shade. It bears small smooth leaves and produces short flower scapes carrying one or two comparatively large, pale pink flowers; a desirable little plant worth persevering with.

HYBRIDS.

In addition to the species of European *Primulas* there are many natural hybrids of considerable beauty, such as *P. Aretotis*, with lilac flowers; *Bernina*, rosy purple discolor, lilac; *Faccchini*, rosy purple; *Fosteri*, rosy purple; *Heerii*, purple; *Muretiana*, purple; *Peyritschii*, crimson purple; *Portia*, red; *Venusta*, purple, and many others. Most of these are in cultivation and were to be obtained from our home nurserymen and from Continental sources before the war. Hybrids have also been produced in cultivation and it is only necessary to cite *P. + Marven* as an example, while numerous crosses have been made between the highly developed *Auricula* of florists with certain species, and of these more will yet be heard.

PRIMULAS FROM ASIA.

From the Himalaya, China and Japan comes a vast array of *Primulas*, happily in many cases good garden plants. Some of the later introductions from China are not yet quite understood, and appear to be little more than biennials, but others are truly perennial and easily grown. The older and better known species came from the Himalayan region and from Japan before collectors had explored parts of China and sent home seeds. Dried specimens of some of the newer Chinese species had been known to botanists long before seeds were sent home and plants raised in this country.

Perhaps one of the most popular of *Primulas*, before the advent of so many new ones, was *P. japonica*, and I am not sure that it is yet outclassed. In its best forms of deep dark red, salmon pink and pure white, with yellow "eye," it is most effective. Grown in rich, moist soil it will throw up its scapes to a height of two feet or so, carrying tier above tier of handsome flowers, which last longer in bloom than those of the much-vaunted Chinese *P. pulverulenta*. Another old favourite from Japan is *P. Sieboldii*, a free grower in peat and leaf-mould, and bearing freely its umbels of white or pink flowers.

There are other species from Japan, but they are not as yet so well known in gardens, though possibly in a few years they will become more common. A number of Indian *Primulas* have been well known and appreciated for many years. One need only mention *P. denticulata* and its variety *Cashmiriana*, *P. rosea*, *P. capitata*, and lately, *P. Winteri*.

J. W. B. Glasnevin.

(To be continued.)

The Editor's Table.

SARCOCOCCA RUSCIFOLIA.

From Sir John Ross of Bladensburg come charming fruiting sprays of this new Chinese evergreen. The berries, produced in clusters of from two to four in the axils of the leaves, are bright crimson, and of great ornamental value. The short-stalked leaves are about an inch long and half as wide, narrowed to a sharp point. The plant is also flowering at the present time, the small, white flowers being fragrant. This is a useful shrub for shady positions, and for that purpose will be welcome to many people.

HELLEBORUS ORIENTALIS AND HYBRIDS.

THIS species of Lenten Rose, with its many very beautiful varieties, has always been a difficulty to the gardener who grows his plants for the house decoration as well as for beautifying his borders and shrubberies. There is always a degree of uncertainty when cutting this species for the house. They sometimes last, but sometimes they do not. "Put them up to their necks in boiling water," one is told is the secret; others say that splitting the stems when first cut answers, but even doing all this and more will not make them satisfactory house flowers in the ordinary cut form. Has any one tried nipping the heads off close to the flower and floating them in the now very popular flat bowls? Nothing looks better in the bowl, clear glass, or coloured china. They look like miniature water lilies, and are reflected in the clear water. The colours are varied, pure white, white with darkened spot, pink, deep crimson, lemon yellow, and even green, are all to be had, and all look well, and, above all, last in this way. Indeed, in this way they behave like the ordinary Christmas Rose, and last until the stamens fall out.

R. M. P.

Early Flowering Rhododendrons.

THE value of these to a garden is a moot point. Certainly, if weather conditions prove favourable it is a pleasant sight to find a bush of the hybrid *R. nobleanum* in flower at Christmas or New Year time, and it is equally good to enjoy *davuricum* and *parviflorum* in February, but alas! how often does one night's frost spoil the endeavour of a whole year. Nor are we out of danger in March. Two newcomers which have been, eagerly and with misgivings, watched for some weeks have succumbed to recent frosts; they are *R. Davidii* and *R. oreodoxa*. The former set with scores of trusses giving great promise, reached the stage of showing the deep pink colour of the buds, and in a few days more would have opened out its pale pink, or nearly white, bells, but repeated frosts before the middle of the month said no! and only a few of the flowers, somewhat protected on the lower part of the bush, are left to open.

R. oreodoxa, which was attempting to flower for the first time and bore only one truss, was in exactly the same condition; the deep red buds were on the point of opening when frost super-vened, and we must wait another year and hope for better luck. It is worthy of note that both plants are placed facing north-west, protected from any sun until late in the day, but this fact did not save them.

Dublin.

B.

Amateur Fern Growing.

By H. D.

(Continued).

Greenfly are very likely to appear, especially on some ferns, such as Polypodys and Maiden-hairs. They are not likely to be troublesome if other plants than ferns are excluded from the house. Fumigation will get rid of them easily:

the house, making every plant attacked look shabby and feel sickly, if the house is allowed to become too dry in summer. If, however, not only are the plants well watered, but the floor kept well watered, and so the whole air of the house thoroughly saturated with moisture, thrip is not likely to appear. If it does, fumigate twice in one week, and ply the watercan.

Scale (or bug) is another common scourge. It again tends to affect the same kinds of plants as thrip. To the inexperienced it may easily



PRIMULA INVOLUCRATA.
Native of the Himalaya.

two, or at most three, fumigations in the season will suffice. Several excellent (?) materials for this purpose may be obtained from garden-supply firms, and the directions for their use followed—so no more need be said here.

Thrip is a bad pest, but should not appear. It affects mostly ferns with hard or firm texture of leaf, such as Harts-tongues, Cyrtomiums, &c. A grey appearance will be seen on the leaf in diffused patches: on turning it over there will be seen small black insects about $\frac{1}{16}$ th of an inch long, generally lying close to the veins of the leaflet, some immature forms may be seen, smaller and pale yellow, almost white in colour. These will appear and spread rapidly through

escape detection, being mistaken for natural scales on the plant. They are like limpets that we see on seashore rocks, but only about the size of a millet seed. They will be found stuck along the leafstem and back of the mid-rib and main veins. If a plant is found badly affected, the best treatment is to pull it up and put it in the fire. If lightly affected the only way of clearing it is to sponge and rub off the scales with water and soft soap. This is a most laborious process, and is likely not to be accomplished without considerable injury to the plant. So as we are out for pleasure, we will pull up and burn this lightly affected plant also.

Another enemy may be mentioned—namely,

caterpillars. Either by night a moth may make its way in through the inch-open roof ventilator, or another ventilator if forgotten; or a butterfly may get in by day. It may then deposit eggs on a fern or ferns, and you know nothing about it till some day a fern is found terribly mutilated, and on examination a whole drove of caterpillars is found. There is nothing for it then but to pick them off and destroy them, watching for them day after day, for it is hardly likely that all will be found at the first search. To guard against this it might be well to cover the space of each ventilator with a sheet of perforated zinc. This has an additional advantage in that it breaks up the air coming in and prevents a draught, which is so hurtful to the plants in their growing stage.

The last enemy we will consider, is reserved as the *bona-bonito*. The Hun enemy of fern growers, whose method is frightfulness, whom we cannot beat alone, but will require faithful co-operation from allies, to even keep him in any sort of control. Sinn Féin is his watchword, and if you do not look out he will win and have the rockery to himself, devastate your most treasured places, ruin your most cherished objects, and drive you, in despair, to leave him undisputed master. This is the character of the Fern Weevil. It is a small dirty-black or brownish beetle (or weevil), about $\frac{1}{4}$ inch long, with faint greyish marking on the back, and the head prolonged into a pointed beak or snout (characteristic of weevils generally), its outer covering is very hard, so that if it falls, say on a stone or the cement floor, it bounds away like a marble. Its progression is slow. By day it lies hidden amongst the scales on the crown of the plant, or in loose earth near the plant, or small plants growing close to it, and is then almost impossible to find. By night it creeps up the frond and eats a semi-circular piece out of the edge of a leaflet. When, soon, a number of these pieces are cut out, the disfigurement is great, the whole appearance of a frond is destroyed. Added to this, the excrement voided scalds and discolours the leaf wherever it falls. It prefers to all others, fronds of good strong texture, such as Hart's-tongues, Polypodys, Cyrtomiums, and such like; as a rule it avoids Maiden-hairs, and will not touch filmy ferns—probably because it does not like wet and damp. If, hoping to catch the marauder, you go out at night with a light, you can see him busy at work if you approach cautiously. But on attempting to secure him, your breath even shaking the leaf, down he drops like a stone, and hops off any hard object he may strike, and so may come to rest a yard away from where you thought he fell. There he will lie absolutely motionless for about a quarter of an hour before he ventures to stir, and sneak off very quietly and slowly to shelter. Your night hunt will be successful if, having seen ten or a dozen, you secure one. Usually you will not have even one for your trouble. Sometimes an odd one comes out to feed by day or towards evening, and these you have more chance of securing; even then the chances are in his favour. But worse is yet to come. The female deposits her eggs in the soil at the base of the crown, amongst the fern roots, grubs hatch out from these and proceed to live entirely on the fern roots, eating them away, up to the very rootstock; as many as ten or a dozen

may be found under one fern. Naturally the plant dies, unless it is a particularly large specimen and strong sturdy grower; the result is that all our more delicate and small growing forms soon succumb, and none are left to us but the commoner sturdy kinds, which can grow quicker than the weevils can eat. These grubs grow to about $\frac{1}{4}$ inch long, rather fat and rounded, pure white, with little pale yellow heads, and are hardly seen to move. On one occasion we had a large polystichum which formed a specially fine crown of folded fronds, giving great promise of a splendid plant next season. Being evergreen no fronds were removed. In the spring we watched for the unfolding and wondered that they were so late, other ferns had put up young fresh green all around, and the old fronds of this particular fern were gradually dying and looking the more shabby beside the others. We stooped to pull off a particularly faded frond, instead of cutting it, when, lo! the whole big plant came up in our hand. There was not a root left remaining on it. We had before contemplated moving it to another more roomy position, but did not do so, as it would have necessitated taking down several rocks and a very large mass of soil, on account of its immense spread of roots. Yet now the weevil grubs had shorn it of every one. On searching through the soil underneath where it had stood we found about 20 grubs.

The adult weevils may be caught and destroyed if the ferns are in pots, by standing the pot in a bucket of water which covers the soil. Up comes the weevil in a few moments, climbing in, for him, a great hurry up a leaf stem or anything that is above water, then we can secure him with certainty and stamp on him with grim satisfaction. But this method requires constant unremitting application. We could hardly plunge all the plants in a house on one day; even if we did, some grubs might remain, which could not come up; they would soon mature and continue their evil customs. If we decided to do six plants every day till the whole collection was gone over, we would find that of the six we did on Monday some were visited on Monday night by weevils from adjoining plants, who had wandered round for a change of diet, or who, having observed what you had been at during the day, considered that their locality was unhealthy, and had moved to the fresh fields you had left untenanted for them. Besides all this our fernery has no pots, and one cannot sink a whole rockery in a bucket of water, so friend weevil laughs, and fares sumptuously.

Again, a hunt for the grubs may be quite successful, but one cannot root up every plant now and then to look for them. The only satisfactory solution is not to introduce them. Get young plants, examine every plant carefully; if semicircular notches appear on the sides of the leaves of any, suspect the whole lot. Do not bring one into the house till you have first plunged every one to see if any adult weevils are present. Then, still working outside the house, turn every plant out of its pot, and even at the risk of the inevitable injury to the roots, pick out every bit of soil from the roots with a pointed stick, and even then wash them in a bucket of water. Plant the ferns at once. They will receive a severe check, and you may lose some, but these are very minor evils compared to that of intro-

ducing the weevil. Burn the soil that was shaken out of the roots.

This is the last of the enemies we will discuss, and will turn to consider the friends.

Frogs are the first. They are indispensable. They do no harm of any kind. They will keep the woodlice in check, and also the worms; that is their business: they will keep at it day and night, and so beat you at it. Get a round dozen of them, and in the late spring add another dozen of small little fellows in their first spring

go down their throats with certainty, to be followed by as many more as present themselves, till froggie becomes so helplessly distended that he can scarcely move. It is good, therefore, to catch one in the greenhouse now and then, and let him out in the garden for fresh air, exercise and varied diet: after, in a week or so, when you see one in the garden looking sleek and fat he is again transferred to the greenhouse. In the spring they will revel in and spawn in a pan of water, if it is left for them, at other times they



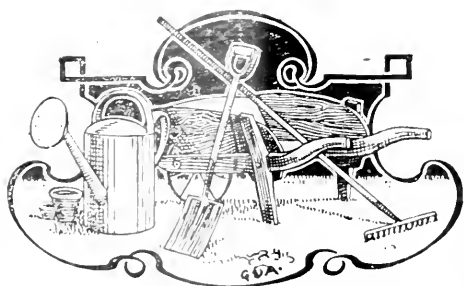
PRIMULA DENTICULATA.

of youth: they will go for young woodlice and other small deer that would be beneath the notice of their more sober elders, besides they are more active, and it is surprising where they will climb. On fine days they may be found perched amongst plants on the highest part of the back wall. Their environment being so curtailed, and, possibly, their diet being so unvaried, they retain their diminutive size for several years, but are quite happy. If the drainage hole in the floor is not trapped as recommended, they will infallibly find the one way out, and rejoice and grow enormously fat in the free and varied living to be found in a town garden. Huge lob-worms, that one would not think there was room for,

do not want it. Toads would serve an equal purpose, but we have not got them in Ireland. Lizards are an excellent help, but they are rare here and hard to get. They are very lively, attractive, and active hunters.

These, unless you have weevils, are all the pets you need accommodate in the fern house. If weevils are present the frogs will take toll of them, but will not be able to keep them down. We must again invoke Dame Nature to fight Nature. Search the garden, through every bit of rubbish, under stones, fallen leaves, &c., for the large red centipedes—big fellows about 1½ inches long.

(To be continued).



Allotments.

AN interesting publication which has just been issued is the "Annual Year Book of the Belfast Garden Plots Association." This Year Book contains, besides the usual report and balance sheet, much useful information for allotment holders. The schedule is also enclosed for the Third Annual Show, which will be held in Belfast during September, 1919. The Association has proved the value of competitions for plot holders, and it is intended, by an enlarged scheme of advertising, to bring this year's show more prominently before the public. The schedule contains 28 classes, and it is interesting to record that last year there was a large increase in the attendance, both of plot holders and the general public. Competitions on the plots have now been held for a number of years, and an elaborate scheme has been prepared for this season, so convinced are the Association of the value of these competitions in giving a healthy stimulus to the movement generally. The Belfast Garden Plots Association was formed for the purpose of providing Allotment Gardens for working men and other small wage-earners who have no gardens attached to their dwellings. Such has been the growth of the movement, that the number of allotments under the control of the Association now total 1,634. In addition there are more than 2,000 plots independent of the Association in Belfast alone, not including any immediately outside the city. The large majority of the plots are one-sixteenth of a statute acre; a very few are larger. When a plot of land is taken over, to include the cartways and footpaths, it usually works out about twelve plots to the acre. Calculating on this basis there must be approximately 550 acres of land devoted to allotments in Belfast. This column is not the place to enlarge on this subject, but who can estimate the many advantages which arise from such a large area of land being devoted to this purpose in the very midst of an industrial community?

SEED SOWING.—Except on light soils, we found it impossible to sow many seeds on the allotments until the end of March, and only then by frequently turning the soil and exposing it to dry wind. Fortunately, in this respect the month of March proved favourable, and, therefore, no time should now be lost in getting the large bulk of the seeds and plants in the ground. Seeds that may be left until May include Beans, both the Kidney and Runner kinds; also the maincrop varieties of Turnips and Beet. With these few exceptions, work should be undertaken this month in real earnest to make up for lost time, as so much depends upon

the work now, whether it is to be success or only a half-hearted attempt. Keep in mind the necessity for getting a fine tilth for sowing seeds. Where birds are troublesome, black cotton should be crossed and re-crossed over the seed beds. In some allotments mice are a nuisance. If the seed is damped and then dusted with red lead it generally wards off these pests. With regard to slugs and snails, dry slaked lime or soot should be dusted along the rows. It is necessary, however, to renew the lime or soot, as the case may be, after rain.

CAULIFLOWERS.—This crop is not always as successful as it might be on allotments. The seeds are often sown too thickly, and the seedling plants left to become overcrowded. The result is, long, spindly plants with weak leaves. Seeds may be sown in the autumn and wintered in a cold frame, or plants raised under glass by sowing in February. The main crop is raised from seeds sown early in April. Transplant the seedling plants in moist weather, and endeavour to grow them without checking the growth. Cauliflowers do well in a rich, moist soil made firm.

BROCCOLI.—We have been cutting throughout the winter, on our demonstration plots, a good number of Snow's Winter White Broccoli. Unfortunately, in large towns, the heads get very dirty in bad weather, but from January and onwards it provides a useful crop. We sow this variety early in April, and then transplant into beds fairly thickly. After the Potatoes are lifted, the Broccoli is planted out. Potatoes being usually well manured, no further manuring is required. Too much manure for Broccoli results in soft leaves, and the plants do not stand the winter so well.

LETTUCE.—Small quantities of seed should be sown every fortnight. In the summer Lettuce transplants badly, and seeds should be sown where the crop is to remain.

ONIONS.—Transplanting Onions is an operation which requires care. In every case the young roots should be handled to keep them intact. Plant carefully, not sinking the stems deeper than to keep the plants upright. Like most things, however, there is an exception to this. Soil may be drawn higher than the level of the ground to keep the plants upright. When the roots have taken hold, the soil should be drawn away from the necks to allow the bulbs to develop.

Onion Mildew is prevalent on allotments. The first indication of the disease is the presence of small white patches of mildew on the leaves. In warm and moist weather the mildew rapidly increases, but dry conditions are against it. If the foliage is soft, the plants may be sprayed with one ounce of liver of sulphur to five gallons of water. When the foliage is hard the quantity of water may be slightly reduced; but if the solution is too strong it will burn the leaves. Three per cent. of sulphate of iron dissolved in water can also be used, and will not injure the leaves, providing the sulphate of iron is pure. Both solutions are cheap and easily prepared.

LUKS.—If the seeds have not already been sown, no further time should be lost, so that good plants may be obtained to plant out on ground that is now occupied by early and second early Potatoes.

FLOWER BORDER.—Hardy Annuals should be sown where they are to remain. Such kinds as Godetia and Clarkia are bad to transplant. The surface soil of the flower border can hardly be too fine for sowing annuals, and the seedling plants should be thinned out early. Well developed plants growing in rich, moist soil will produce a lovely mass of bloom.

G. H. O.

The Month's Work

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

MANY of the showiest annuals if sown during this month will give a lasting display from mid-July onwards. These include *Clarkia Lavatera*, *Malope*, *Eschscholtzia*, *Larkspurs*, *Nigella*, *Mignonette*, *Linum rubrum*, *Sweet Sultan* and *Cornflower*. Assuming that the ground for these was well dug or trenched and enriched with manure, as advised in this column in January, all that will be necessary now is to tread the surface evenly when dug and rake it fine. Sow the seeds evenly and thinly, rake them in lightly, and water well afterwards with a fine rose. Thinning is important and should be started as soon as the seedlings are large enough to handle, and subsequently at fortnightly intervals until the required space is given.

Pentstemons rooted in cold frames should be planted out as early in the month as possible to get the best results. They require a distance of 15 inches apart each way. *Violas*, also, may be planted during this month.

The herbaceous *Lobelias*, which include *Cardinalis* and its varieties, as well as *Syphilitica*, *Rosea* and *Carminc Queen*, are amongst the most useful subjects for summer and autumn display. To get the best results they should be lifted and divided annually, about the middle of April. Replant single shoots with roots attached, at 9 inches apart each way, in well manured ground, and water copiously in dry weather throughout the summer.

Sweet Peas raised in pots and boxes should be planted as soon as the ground is in good order. If they are allowed to become rather dry before planting, it will be easy to shake each plant out of the soil singly, with all its roots intact. Water well after planting and stake with small twiggy branches. If cold drying winds prevail they should be protected for a few days with small spruce boughs.

THE VEGETABLE GARDEN.

ONIONS.—If the main crop has been raised in boxes they should be planted as early in the month as possible, when the ground is in good order. Tread or roll the ground firmly and draw lines at 15 inches apart, dibbling in the young plants at 6 to 9 inches apart in the rows. It is important not to plant too deeply or a thick-necked, non-keeping crop will result. Water in well after planting, and hoe between at intervals of ten days or so. Frequent dustings of soot during showry weather will immensely benefit this crop.

Cauliflowers raised under glass and properly hardened off, may now be planted out in rich ground. Eighteen inches apart each way will provide space enough for this early batch, but 2 feet will not be too much to allow later plantings.

Parsley and Lettuce raised indoors should also be planted now.

Seakale sets, if prepared during the winter and laid in ashes, may now be planted. Insert the thongs or crowns vertically, so that the top is just below the surface of the soil. If the crowns are to be lifted for forcing they should be planted in rows 2 feet apart, and 1 foot apart in the rows, but if they are to be covered where they grow it is better to plant three in a triangle at 1 foot apart, allowing 2 feet each way between each clump.

Autumn and winter Broccolis, Kales and Savoys should be sown during this month, also Cauliflowers for succession. Autumn Broccoli require sowing early in the month, winter kinds about the middle, and the late spring varieties near the end of the month.

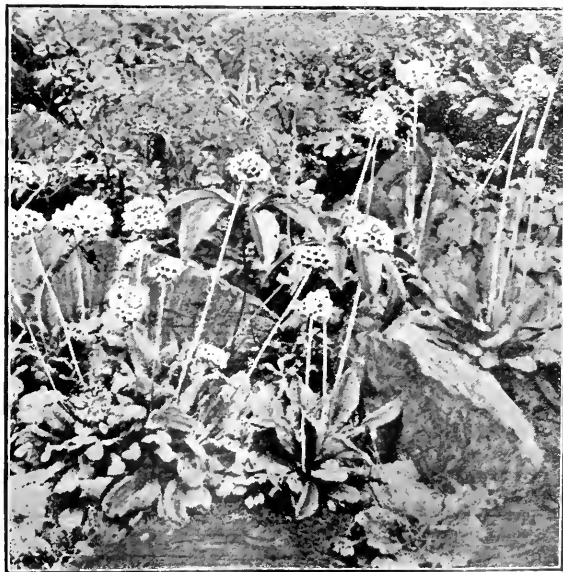
Sow also more Peas for succession, and Broad Beans; and Carrots for main crop.

Celery seedlings should now be pricked out into rich soil in a cold frame at 3 inches apart each way. Keep them well watered and dust over with soot at fortnightly intervals.

THE FRUIT GARDEN.

PRUNING.—Newly planted fruit trees should now be pruned, and the leading growths shortened to about a third of their original length. This applies to trained trees on walls as well as to bush and standard trees in the open. If dry weather supervenes they should be well mulched in good time with strawy manure. See that all stakes and ties are in good order and suitably placed, as it will not be easy to see them after this month when the foliage has covered them.

STRAWBERRIES.—It is usually recommended to Mulch Strawberry beds with clean straw during May, and for new beds this is doubtless the best plan. But in the case of older beds that have somewhat exhausted the soil it is well to mulch



PRIMULA MOOREANA,
The best of the capitata set.

with a good layer of rich stable litter during April. The manurial contents of this will then be washed down by rains to the roots of the plants, to the great benefit of the crop, leaving a clean and sweet surface for the fruits to rest on.

FROST AND FRUIT BLOSSOM.—Continue to afford protection to early flowering Plums and Peaches on walls as soon as the blossoms begin to open. A double thickness of garden netting hung over the trees whenever frost threatens will often save the crop. The netting should be kept clear of the trees by long poles leant against the top of the wall.

Midland and Northern Counties.

By W. ROBERTS, Gardener to Lady Emily Bury, Charleville Forest, Tullamore, King's County.

THE KITCHEN GARDEN.

COMPLETE planting of Potatoes whenever the ground can be got in suitable condition. Apply manure to Asparagus beds, also make new beds wherever necessary, and, if preferred, seed may be sown, but I prefer the plants, as the latter is slow and troublesome. A sowing of Globe Beet may be made for early supplies; also Carrots for main crops. This crop requires a good deal of care in some soils to bring to perfection and it will pay to give them a little extra attention at time of sowing in the way of some fine old potting soil for covering the seed and of being very careful at time of thinning, selecting, if possible, showery weather for the operation, so as to prevent the ravages of the Carrot fly. On deep sandy or loamy soils the intermediate or long varieties do well, but on shallow or retentive clays the stump-rooted kinds do best. Towards the end of the month a few French Beans may be sown on a sheltered border, also some of the second early section of Peas, and for succession Broccoli, Borecole, Cauliflower, Savoy, &c. Plant out Onions raised under glass in January; also spring-grown Lettuce from frames. This is a good time to renovate any box edging requiring it, or make up gaps, and also clip and generally tidy up those not requiring renovation.

FRUIT HOUSES, &c. This department will require a considerable amount of attention now. Peaches will require disbudding, tying, syringing, and also a strict watch be kept for green fly. Tobacco powder applied with a rubber duster and washed off the following morning is a good remedy if taken in time, but where badly attacked a vapouriser will be best. The vineries will by now also require the usual attention in tying, thinning, stopping and watering, the latter operation being far more important than a good many think, as given good drainage it would be very difficult to say when they had enough, and even on properly made outside borders the same remark more or less applies, as they are much too often left depending on an occasional shower of rain at a time when they require an enormous amount of moisture. Melons and Cucumbers will also begin to give trouble, not to mention Tomatoes, which of late years have almost ousted everything else out of the houses in some places. They have become so generally grown and so comparatively easy to grow that it is almost unnecessary to give any cultural directions, and I will content myself with giving one only—that is, wherever possible obtain a fresh supply of

loam for your plants every year and avoid all farmyard manure until you have your plants in full bearing, when a slight mulching may be given, or better still in the way of liquid manure. A good many seedlings will require pricking off into frames now, such as Asters and half hardy annuals generally. A dressing of soot raked in will help to check slugs at time of pricking off, and a sharp look out kept afterwards, or they will do a lot of damage.

Royal Horticultural and Arboricultural Society of Ireland,

THE monthly meeting of the Council was held at the offices, 5 Molesworth Street, Dublin, on the 14th ult., Mr. H. P. Goodbody presiding.

Judges were nominated for the Spring Show to be held in the covered yard of Lord Iveagh's Dublin residence, entrance by Earlsfort Terrace, on the 10th inst.

A collection of violets exhibited at the meeting by Mrs. Stanistreet, the Rectory, Newmarket-on-Fergus, was awarded a First Class Cultural Certificate. Mr. C. Palmer, Farnleigh Gardens, Castleknock, was elected a practical member, and Dr. Neill Watson, Islington, Terenure, an annual member of the Society.

The Interim Forestry Authority of the Reconstruction Committee received a deputation representing the above Society, the Irish Forestry Society, the Landowners' Convention, and the Surveyors' Institution, at the offices of the Timber Controller for Ireland, at 6 Hume Street, Dublin, on the 14th ult. Among those representing the various bodies stated being the Marquis of Headfort, Viscount Powerscourt, Lord Cloncurry, Messrs A. E. Moeran, V. C. Le Fanu, H. Bruen, G. F. Stewart, R. E. Munnell and S. J. Browne, the Interim Forestry Authority consisting of Lord Lovat, Mr. Aeland (Chairman), and Mr. T. B. Ponsonby. Various views as set forth by the representatives of the bodies attending were discussed, and important points raised on the question of afforestation as affecting Ireland, all of which are matters for consideration when the permanent Forestry Authority comes into being.

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Irish Gardening

Contents

	PAGE		PAGE
Berries (Illustrated)	65	Notes and Abstracts	72
The Propagation of Alpines (Illustrated)	67	Irish Reconstruction Problems	72
Rhododendron taliense (Illustrated)	68	Journal of the Kew Guild	72
Cyclamens (Illustrated)	68	Manuring of Fruit Trees and Bushes	73
Fruit Prospects	68	Competitions for Allotment Holders	74
Trees and Shrubs	68	Amateur Fern Growing	75
Water Lilies (Illustrated)	69	Primulas for the Garden	76
Hardy Plant Notes	69	Anemone apennina	77
The Rose Garden	70	Allotments	78
Potato Spraying in Gardens and on Allotments	70	The Month's Work— Southern and Western Counties	79
The Gathering and Storing of Fruit	71	Midland and Northern Counties	80



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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE

VOLUME XIV
No. 159


ADVANCEMENT OF HORTICULTURE AND

MAY
1919

ARBORICULTURE IN IRELAND

EDITOR J. W. BESANT.

Berries.

T seems, perhaps, hardly suitable just as "spring is a-comin in" to consider winter effect in our gardens; but, as at this season one must make plans for the future, I will not ask for toleration. In the spring and summer almost every garden in Ireland is a joy, but when all the vivid colour of autumn has passed, and the herbaceous border is a series of ghosts—the rock garden barely a memory, and the water garden surrounded by dank, decaying vegetation, then we say to our guests, "You *don't* want to see the garden, do you? There's nothing in it."

Now, this, to me, savours of idleness. Nature does not treat us thus. My autumn and winter are spent a good deal alone, and I depend greatly for companionship and interest on what I find out of doors, so I can tell you with assurance that if the gardens are depressing and bare, the wild places are not.

All along the hedgerows are berries—rose-hips, sloes, spindle, viburnum, and all over the fields hedges burn with haws.

A little thought and arrangement might easily bring some of that colour into our immediate surroundings.

Last summer, strolling along the lanes in the evenings here, we were struck by the beautiful heads of blossom on the *Viburnum* bushes growing along the ditches—almost as lovely as *Viburnum plicatum*—and still, the gift was not complete, for in the autumn came gorgeous leaves, and far into winter the bunches of brilliant berries lasted.

This gave us an idea, so we went out and stole some from beside the King's highway and planted them in a clearing in a grove, where they are now budding bravely.

Then we worked out another plan—why not a hedgerow of snowberries and spindle? Rather a charming colour scheme that, isn't it? Pink

and white against a background of *Thuja*s or a yew hedge—and if you could combine privet berries, still more attractive.

Then—oh! there are any amount of things—Buckthorn berries, all the *Cotoneasters* (giving *frigida* first place), *Pernettyas*, *Pyracanthuses*, Barberries, and Ivy berries. Poor old *Hedera*! He is regarded as a nuisance and a thing to be kept down—so he is—but really his fruit is very handsome, and there *are* places where he can be allowed.

Some years ago, I dug up two snowberry suckers from an annoying grove of them, and planted them in my "grey garden," one at each end. Every March—early—I have cut each stem rigorously down to about three inches from the ground, and the result is a splendid crop of extra large berries. Only this autumn, the gardener asked me "where I got the special kind of Snowberry with such big fruit." I gleefully told him that they came from the parent grove which he had been trying to exterminate from a dank, shady spot, and the berries he admired were only the result of light, sun, better soil, and my hard pruning. Of course, in some places and in some seasons, the birds will hardly leave you a fruit on your bushes and shrubs, you must chance your luck. Last year, our *Cotoneaster horizontalis* were gemmed with berries right or into February. This year, scarcely any were left by December. But not all are bird diet—snowberries, spindle, privet, and buckthorn are, I think, safe.

Some of the *Crataegus* keep their fruits quite late too. Then, there are the great, fat, jammy looking hips of *Rosa Rugosa*, another briar rose (I don't know its name) has wicked little black ones, and *Rosa nitida* is decked cheerfully *en suite* with crimson berries and stems.

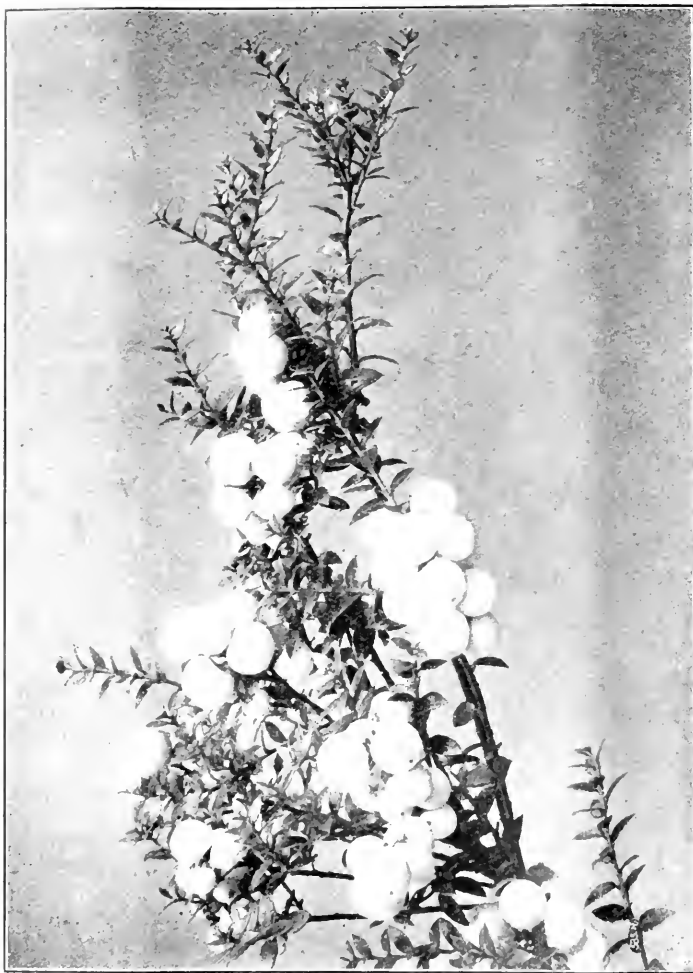
On a lower level, you have the lovely orange scarlet seeds of Gladwin or *Iris Fœtidissima*, which birds won't eat; the handsome spires of

Wild Arum, as dangerously attractive as the sprays of Woody Nightshade berries, graded from emerald green through yellow and orange to scarlet.

Besides, there is the infrequent crop on Juniper

Autumn and Winter Effect," by C. R. Fielder, V.M.H.

This goes very fully into the subject—dealing with leaf effects, the value of bark colouring, and also berries.



PERNETTYA MUCRONATA, WITH WHITE BERRIES.

perus communis and Butcher's Broom, that quaint, rather pathetic, prehistoric plant which has no longer any leaves proper but *cladodes* or branches which have taken up the work of the leaves, and right on these they bear their red fruits, like fairy dessert set out on little green dishes.

In the "Journal of the Royal Horticultural Society," February, 1919, there is a most interesting article on "Trees and Shrubs for

We have three plants of *Berberis virescens*, the winter colouring in the stems of which is a constant joy—but there ought to be thirty of them, a great tumbling lump with a dark green background. It is perfectly useless to have one plant of any of these winter effects—plant them generously in a wide colour scheme, or not at all.

Wander round in the winter months, that bare horrible time from December to March, till

the buds begin to show, and note how little there is to please the eye *except* berries.

But, at the same time, if you have thought winter devoid of colouring, go forth into the roads and fields next November to March and observe what Nature has provided as a feast for the "smale foule"—also, incidentally, your pleasure, and, coming home to your own garden, wonder why there is "nothing to look at."

I began this intending to talk only about berries—and now I find that I am digressing.

There is so much to say about winter colour—even in stems and barks; in fact, all the dainty

My method of striking cuttings under cloches is to make up a bed of good sandy soil, about one foot in depth, in a warm, sunny position, and in an area to hold double the number of cloches that will fit on the bed.

One species under a cloche is the rule for success; for instance, if cuttings of *Saxifraga* and *Helianthemum* be put together one will root before the other, and if you are not careful you will lose both.

The cuttings are put in from June to September. After the cuttings are inserted give a thorough soaking of water through a fine rose.



ANEMONE PULSATILLA ALBA

devices with which Nature consoles us for the lack of flowers and leaves, that it were better that I should stay my pen, except to write Finis.

MURIEL E. BLAND.

March, 1919.

The Propagation of Alpines

IN the March number of IRISH GARDENING reference was made, by Mr. Murray Hornibrook, to the French method of striking Alpine cuttings under cloches.

I enclose a photo of same, a practice I have followed for some time and with great success.

I always found it beneficial to whitewash the side of the cloche most exposed to the sun; this saves a lot of attention and watering. As soon as the cuttings are rooted, the whitewash may be removed; admit air gradually, and finally remove the cloche altogether to a new position on the bed, to be used again. About a fortnight after the cloche is removed the cuttings are ready for potting into three-inch pots; plunge into sand or ashes in a shallow frame and keep close for a few days until fresh root-action begins. Admit air gradually, and finally remove the lights altogether. Some Alpines, given this treatment, from cuttings taken in June, make good plants for planting out in September.

ANGUS SLATER.

March 17th.

Rhododendron taliense.

THERE is no published record of this evergreen Chinese *Rhododendron* flowering in the British Isles, though first introduced by Mr. E. H. Wilson during his 1903-1904 Veitchian Expedition. It is distinct in habit, forming a comparatively dwarf, rounded bush at present, though as a wild bush it is said to reach a height of 15 feet to 25 feet. The leaves are dark green above, tawny beneath, with a decidedly leathery texture, ovate to ovate-lanceolate in shape, $1\frac{1}{2}$ inches to 4 inches long, and about one-third of this in width. The flowers are described as about 1 inch in width and depth, up to ten or twelve, occasionally more, flowers in a compact truss. The colour is said to vary from milky white to cream and yellow, and sometimes a flush of pink.

R. taliense is found at considerable elevation. The Abbé Delavay collected specimens in Yunnan about 1885, Mr. E. H. Wilson sent home seeds from Western Szechuan in 1903-04, and from Tachien-lu in 1908-10. This note is perhaps more concerned with its further introduction by Mr. George Forrest in 1906, as he is responsible for the illustration of the plant growing on the eastern flank of the Tali and Lichiang ranges at an elevation of 11,000 to 14,000 feet. Cultivated specimens may easily be confused with *R. Przewalskii*, which it most nearly resembles. In fact, some of Mr. Forrest's numbers may prove to be this species.

A. O.

NOTICE

READERS are invited to submit questions bearing on gardening in any of its branches. It is our desire to stimulate and encourage gardening in Ireland, and we are in touch with experts who will be glad to give every assistance.

We are always open to consider articles and would be glad to receive photographs of gardens or plants—for publication, if suitable; senders will oblige by stating whether payment is desired in the event of publication.

Cyclamens.

THE accompanying photo of the Cyclamen Giant White was taken fourteen months after sowing the seed, and shows what may be expected from these fine winter-flowering plants. The seed was sown at the end of July in heat and grown in heat during the winter and spring months, the plants being kept potted on, before they got pot-bound. From the beginning of May to the end of August they were grown in a frame, syringed in sunny weather, and given light shading from hot sun. At the end of August they were brought into a warm greenhouse, when the flower spikes were beginning to show freely. The plants were stimulated with liquid manure, and occasionally with Clay's Fertiliser.

A. S.

Fruit Prospects.

It is yet too soon (21st April) to prophesy with regard to the fruit crop for the coming season. The blossoming period is a critical time, and hail and frost often do irreparable damage to the bloom. The prospects, however, are good, and given a favourable spell of weather during the next few weeks, there should be an excellent crop of fruit. The season is a late one, and the spring has been extremely harsh, consequently there is no danger of premature blooming. Flower buds are numerous on the apple trees, and swelling fast, though on some varieties they are yet quite dormant. This is all to the good.

Varieties of Apples like Lane's P. Albert, Lord Grosvenor, Golden Spire, Newton Wonder, &c., which cropped heavily last season, should have the flowers or fruit thinned if necessary. This will relieve the strain of over-cropping, and enable the trees to carry better fruit. The question of feeding such trees also arises, and should not be neglected.

D.

Trees and Shrubs.

TOWARDS the end of April there was a remarkable improvement in the number of woody plants in flower. In the course of a few days winter vanished, at least in the day-time, and spring arrived. Although the nights remained cold and even frosty, the warm sun coaxed many shrubs into flower.

The wonderful improvement in the popular *Forsythias* is evidenced by the opening of such handsome varieties as *F. intermedia densiflora*, which well merits the varietal name from the dense way in which the flowers are produced; *F. intermedia spectabilis* is deeper in colour than the type and flowers more freely, making

a striking bush. *F. suspensa atrocaulis*, introduced by Mr. Wilson, has dark, purplish shoots and pale yellow flowers, freely produced; it is a notable and beautiful shrub, deserving of wide recognition. *Amelanchier canadensis*, the June Berry of Canada and the States of America, is one of the most satisfactory of small flowering trees, rarely failing to provide a wealth of blossom in April, followed by reddish berries in June, while the leaves change to delightful red and yellow shades in autumn. The flowers, as a rule, do not last long, but as the tree is small and does not occupy much space, its beauty can be enjoyed in various positions.

Water Lilies.

NYMPHÆA, ORDER NYMPHÆACEÆ.

A GENUS of magnificent and most desirable aquatic plants; there is every likelihood that the cultivation of these plants will be more extended, with the introduction of the new hardy hybrids which have given colours hitherto unknown among the hardy Water-Lilies. Their handsome leaves and beautiful flowers render them ornaments to any garden, whether they are grown in the open or in tanks under glass.

They thrive best in a situation open to the sun, and may be grown in barrels, basins, streams, creeks, rivers and lakes.

A natural basin may be formed in a river by planting for protection against floods such aquatics as the Giant Reed Mace, *Acorus calamus* and *Iris pseudo-acorus* in shallow water.

The plants should be tied to stakes driven into the bed of river.

Soil.—For barrels and artificial basins place a good layer of loamy clay at the bottom, and four or five inches of fibrous loam and leaf-mould for planting tubers in, then fill up with water.

Planting.—The best time is from the middle of April to the end of June. When planting in lakes or ponds use shallow baskets filled with soil, plant tubers, then tie down and sink where required.

Varieties suitable for tubs, barrels, basins, and small ponds:—*Nymphæa*, *Laydekeri*, *N. pygmea alba*, *N. Ellisiana*, and *N. odorata*.

Varieties suitable for rivers, lakes, and large ponds:—*N. Gladstoniana*, *N. alba*, *N. Marlacæa carnea*.

Propagation.—By division in spring: a small portion of the rootstock with a bud will soon make a good plant, with ordinary care.

By seeds sown in spring in small pots of soil sunk in water and placed in a warm temperature.

ANGUS SLATER.

14th April, 1919.

Hardy Plant Notes.

DORONICUM Miss Mason is quite a good early-flowering form of the Leopard's Bane, and was open early in April on a sunny border. At this time it was not more than six inches high, the bright yellow flower heads looking very bright in the cold days we then endured. Like others of its kind it is easily increased by division of the roots in autumn or spring.

Valeriana plu aurea, though of little account during the rest of the year, is quite attractive in spring, when the leaves and young growths assume a bright yellow colour. Later in the year the plant is green and of little value from a decorative point of view; it should therefore be planted in some position where it will not be in the way of better summer plants.

Anemone pulsatilla alba has not the merits of the violet coloured type, yet, when seen in good clumps or masses, it is not without value in April. The white flowers generally do not seem so large as those of the commoner form, but are nevertheless effective in contrast. A loamy soil containing lime suits the Pasque Flower very well.

Anemone blanda scythnica is a really beautiful variety of *A. blanda* differing from the type in having the petals pure white within and deep blue without. It is difficult to say at which stage the flowers are more attractive, in the bud when the blue is most in evidence, or when fully open, showing the glistening white inner side of the petals. The plant sows itself freely, and the seedlings come wonderfully true, though occasionally some have wholly blue flowers, and good forms can often be picked out. A moist position in peaty soil or leaf-mould suits it admirably.

Tulips of garden origin have been little seen in our gardens of late years, if we except those lucky places where Darwins and Cottage Tulips thrive and do not "break." Happily, however, many of the more robust wild species have remained with us and have been a source of delight to many.

Tulipa præstans, Tuberger's variety is worthy of notice, being hardy and prolific, so that a stock may soon be acquired by carefully lifting the bulbs annually, taking care of the small ones as well as the large. The pointed flowers are bright salmon red in colour, and look remarkably well when grouped in the rock garden in a warm sunny position.

Tulipa polychroma has pale pink flowers, the petals yellow at the base inside; the leaves are comparatively long and slender, mostly lying flat on the soil.

Tulipa pulchella is a pretty little species with pink flowers a shade deeper than those of *polychroma* and with narrow wavy leaves close to the soil also.

Tulipa præcox is a tall strong grower reminiscent of the Cottage or Darwin varieties. The globular flowers are rich red with dark blotches at the base of the segments.

Tulipa Fosteriana was a blaze of colour up to the middle of April and attracted much attention. The huge scarlet flowers are readily seen from a considerable distance, and never fail to win the warmest praise from every visitor.

Tulipa Greigii is somewhat of an enigma and does not lend itself to lifting annually so well as some others. It is an attractive species, however, and our greatest success with it has been in planting, close to the base of a sunny wall, in loam and sand and then "leaving well alone." There it

comes up every year flowering irregularly, that is, all the bulbs do not flower at the same time but keep on appearing for several weeks. The leaves, too, vary, some being spotted and streaked with brown, and some almost wholly devoid of any marking. The flowers are orange red.

Muscari botryoides album is a chaste and pretty bulbous plant for the rock garden or border of select things. The dense spikes of pure white flowers look most attractive against a dark background of rock, or spearing through a carpet of some low, green creeping plant.

Narcissus bulbocodium, the Hoop-petticoat Daffodil, is not invariably a success when planted under conditions that suit its more robust brethren. It seems to require warmer soil in a position where the bulbs will get well ripened in summer. Here it seems to have established itself in a granite moraine, well exposed to the sun and

or large quantities, and is a sure remedy for "Fly" when used according to directions, and tobacco solutions are equally good. The Quassia and Tobacco Washes are also effective against the Rose Sawfly, which frequently does much damage to the young leaves.

Mildew, which makes its appearance later in the year, is usually dealt with by applying sulphur in one form or another to the leaves. When the plants attacked are few in number it may be sufficient to dust the affected leaves with ordinary sulphur, but when the attack is bad and many plants have to be gone over spraying will be necessary. Potassium sulphide, obtainable from chemists, may be used at the rate of two ounces dissolved in three gallons of water, or lime-sulphur solution applied according to directions will probably be equally effective. Various other proprietary remedies can be obtained, but it is of



PROPAGATING CLOCHES.

Photo by A. Slater.

slightly sheltered from above by the branches of a pine. It is now, in the middle of April flowering freely.

B.

The Rose Garden.

THE Rose season seems likely to be late this year judging from the small amount of growth evident on bushes cut back in March. This may be all to the good, for early growth in Roses is liable to be "nipped" in May just as other things are.

What the summer may hold in store in the way of insect pests and fungus diseases is not yet evident, but there is little doubt the usual visitations will manifest themselves in due course. It will be well, therefore, in these times of scarcity and restrictions to consider the advisability of acquiring some stock of materials for combating the various pests. Greenfly is very often the first pest to appear and should be promptly dealt with by syringing or spraying, as the case may be, with some suitable insecticide. Various proprietary materials are obtainable from seedsmen and sundriesmen. Ordinary soapy water from the wash tub is not by any means to be despised, and not a few cottage gardeners never use anything else. Quassia Extract can be purchased in small

first importance that the attack whether of insects or fungi, should be dealt with immediately on being noticed and not left until it has spread.

During the next few weeks there will be little to do among Roses except to keep a sharp look out for pests; the soil should be kept free from weeds and loose on the surface by hoeing frequently whenever the weather permits.

Potato Spraying in Gardens and on Allotments.

EVERY really up-to-date gardener and allotment holder who grows Potatoes now sprays them to prevent their damage by blight. In the past the work of spraying has been a somewhat delicate and tiresome job. It has been necessary to dissolve the sulphate of copper and soda crystals, or lime used for the making of Burgundy or Bordeaux mixture, in separate vessels, to mix them with the utmost care, to test the strength of the blend with litmus paper, and so on. There is no doubt that many small growers who would otherwise

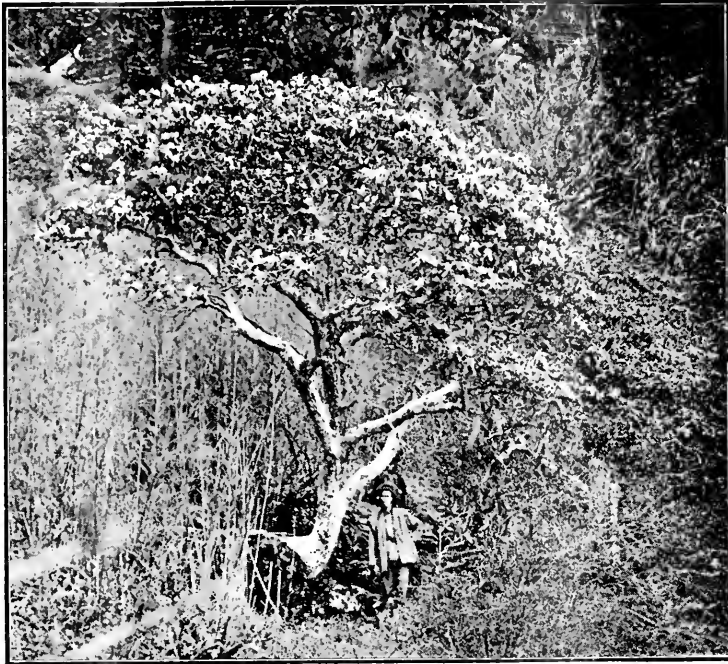
have sprayed their Potato crops two or three times during the season have refrained from doing it more than once (or have not done it at all) owing to the complexity of the process. These small growers will be pleased to hear that they need have no more bother with their spraying. The Mond Nickel Co., the Proprietors of the famous "Maple Brand" of Copper Sulphate, which forms the basis of all the effective Potato sprays, have this season introduced a Potato spraying mixture with the topical and attractive label of "Blighty." We can imagine the Agriculturists and allotment holders of the country after a trial of this mixture, which is of the standard 2 per

turn yellow. Easy separation at the junction between stalk and spur is the best way to tell when hard fruit is fit for gathering. Fruit that requires much force to detach it will not keep long. All fruit for storing should be gathered when perfectly dry, and at intervals when it readily leaves the spur.

Handle carefully, as slight bruises destroy the tissue and cause decay. Separate the small and defective from the clean and fine sample.

Soft fruit should be gathered when just ripe.

In storing fruit for proper preservation low temperature, still atmosphere and darkness are essential. Low temperature and the exclusion of



RHODODENDRON TSIENSE IN CHINA

Photo by Geo. Forrest.

cent. strength and is made ready for use by the mere addition of cold water, declaring in parody of the words of the well known soldiers' song, that "Blighty is the spray for us."

The mixture was thoroughly tested last year by members of the staff of the Food Production Department and warmly praised by them. It is available in packets of 1 lb. and upwards, and will be tried by a large number of our readers.

The Gathering and Storing of Fruit.

THE different varieties of fruit are influenced in the period of ripening and gathering by *soil*, *climate*, *season* and cultivation. A practical eye can readily detect the changed appearance which Apples, Pears, &c., assume in ripening. In most cases colour becomes brighter and the green parts

atmospheric air (draughts) allows ripening to proceed very slowly. Stillness of atmosphere retains the carbon dioxide exhaled by the ripening fruit, and which acts as a powerful preserver.

Unsteady temperature is injurious. Warm air brought into contact with cold fruit causes a deposit of moisture on its surface, and when the atmosphere is colder than the fruit it loses moisture and consequently shrivels. Temperature of fruit room 36 degrees; never higher than 40 degrees. Apples and Pears keep well when stored in a suitable room, just separated on perforated shelves. The choicest fruit may be wrapped in tissue paper.

Shallow boxes made of white deal, deeper at the ends than the sides, answer well for storing fruit; these may be placed one above another and moved without trouble. Cleanliness and sweetness are indispensable throughout.

Notes and Abstracts.

Of great interest to gardeners is an article in the March issue of the *Journal of the Board of Agriculture and Fisheries*.

Dr. Walter Collinge, of St. Andrew's University, has for many years made a close study of the habits of our wild birds, particularly as to their food. This is a question of much importance to gardeners, as it is undoubtedly difficult to estimate fairly which are beneficial and which are not. Undoubtedly some birds do considerable damage to fruit buds, and also to fruit, but many also devour insects and caterpillars, which are even more inimical to fruit and vegetable crops. Dr. Collinge's article goes into the matter thoroughly, and while too long to reproduce in its entirety we give below the summary.

"After examining the stomach contents of 798 adults and 166 nestlings embracing 8 species of wild birds, the opinion has been formed that:—

"1. The Jackdaw, Yellow Bunting, Great Tit, Blue Tit, Song Thrush and Fieldfare are distinctly beneficial.

"2. The Great Tit, Blue Tit and Fieldfare are beneficial to such an extent that their protection is advisable.

"3. In spite of the injuries it commits it would be unwise to recommend any repressive measures for the Chaffinch.

"4. The Starling has been allowed unduly to increase. At the present time it is far too numerous, and the injuries it commits are far greater than the benefits it confers. Temporary repressive measures would, no doubt, help to restore a more normal population of this bird with considerable benefit to both the farmer and the fruit grower."

It is to be hoped that the whole article will be issued as a leaflet.

As a supplement to the March number of the *Journal of the Board of Agriculture and Fisheries*, the Board has issued a companion copy entitled *The Cultivation, Composition and Diseases of the Potato*. The important matter of cultivation is very fully and exhaustively dealt with from start to finish, including preparation of the soil, manuring, spraying, choice of variety, change of seed, sprouting, whole versus cut "seed," time of planting, depth, distance apart; in fact no detail is omitted. Potato diseases are ably dealt with by the Board's expert in fungus diseases, and coloured illustrations are given of diseased Potato leaves. Photographs of sprayed and unsprayed plots are instructive, and the dread Wart Disease is illustrated and described. Other diseases are dealt with equally fully. Practical hints on spraying and the results of spraying trials are of great value, while not the least interesting and valuable feature of the supplement is the report of the famous Ormskirk trials.

The whole publication is one every gardener and farmer should have by him, and it can be obtained from the Board of Agriculture and Fisheries, 3 St. James' Square, London, S.W.1, for the modest price of sixpence, post free.

BEEKEEPERS will be interested in the April number of *The Woodworker*, a useful and instructive publication issued at the small price of fourpence, and obtainable from Messrs. Evans Brothers, Ltd., Montague House, Russell Square, London, W.C.1.

The object of *The Woodworker* is to give plain practical instructions in the making of simple

articles from wood. Owing to the importance of the beekeeping industry we venture to draw our readers' attention to the illustrated instructions on the construction of a W. B. C. hive. Many other useful articles as well as toys are dealt with.

THE arrival of the March number of Berger's *Mercury* is a reminder that the spraying season is not yet over. After fruit trees have been sprayed for the caterpillars of the Winter Moths there will still be Potato spraying to carry out, and it will be well to have the materials in stock. Berger's make a speciality of such materials and supply them in any quantity ready for dilution.

Irish Reconstruction Problems.

HORTICULTURAL RESOURCES.

UNDER the auspices of the Royal Dublin Society a series of lectures was delivered during the winter and early spring months. To Sir Frederick Moore was entrusted the duty of dealing with Ireland's Horticultural Resources, and the text of his lecture is now published by the Society and sold at the price of sixpence per copy.

The author has gone fully into the possibilities of fruit and vegetable culture, and from long experience is able to give definite advice and instruction as to the lines along which development can take place. His remarks on fruit growing are of especial importance in view of the work of the Department of Agriculture in encouraging fruit growing in Ireland. Sir Frederick has been closely identified with the movement from the beginning and can speak with first hand knowledge of the results and probable development. We cannot reproduce the whole lecture here, but the gist of his remarks may be summed up as follows:—

"Grow a limited number of varieties, and these in as large numbers as possible in each individual case; cultivate thoroughly on the most up-to-date lines, grade fruit carefully, and adopt standard receptacles for marketing, and make quality the watchword."

In conclusion he says:—"I regard the great hope of the future to be small areas, intensively worked, the work being done largely by the owner and his family with as little hired labour as possible. Horticultural methods, not agricultural! The gardener expects to get more out of the soil than the farmer, and he succeeds in doing so."

Journal of the Kew Guild.

THIS annual publication is again before us, and will be eagerly read by all those who have been employed in the famous gardens at Kew.

The frontispiece is a fine photograph of Mr. George Stanton, an old Kewite for many years head gardener at Park Place, one of the finest estates in the Thames Valley. Mr. Stanton is President of the Guild for the current year.

The letters from soldier Kewites are of great interest, as are those from old Kewites in various parts of the world.

No less than 21 Kew men made the great sacrifice during the war. The obituary list is altogether a heavy one. Let us hope that never again will the pages of the Journal contain so many sad records of young men lost through war.

Next year we hope to see the Directory of old Kewites restored; it is invaluable for keeping in touch with old friends.

The task of the Editor has been a heavy one

for the last few years, but we trust that henceforth his labours will be lighter and that Kew men will rally to his assistance in acquainting him of their whereabouts, and in communicating items of news likely to be of interest to old friends.

B.

Manuring of Fruit Trees and Bushes.

(Continued.)

APART from other considerations previously mentioned it will be quite obvious that different kinds of fruit trees or bushes may require different manurial treatment, and also that a tree in its old age requires even more careful attention than in its youth, assuming that the object of manuring is to assist the tree to carry maximum crops of high quality fruits over an extended period of time.

Thorough Cultivation should be considered the first essential part of any manurial scheme or system; attention should be particularly paid to the *drainage* of the land in which the trees are growing. If the ground is at all waterlogged the soil water soon gets sour and is unfitted for the use of the plant, while the lack of air in such soils will also militate against effective root development and action. Trees existing under such conditions usually develop weakly growths, which soon fall victims to canker or other diseases. Surface cultivation should also be vigorously carried out. Where grass or other plants compete with the trees for water and its containing salts or food elements, stunted growth results, with consequent development of small fruits.

Surface Cultivation not only gets rid of these competitors but also helps to check the loss of water through evaporation, as a loose layer of soil or mulch acts as a nearly impassable barrier between the soil water which lies below, and in addition ventilates the soil, so that roots breathe and develop more freely. Other useful germs of life in the soil become stimulated, and various chemical and other changes take place, which result in an increased fertility of the soil and consequently increased production of fruit.

Pruning, whether of branches or roots, should be carried out efficiently and with care, otherwise the value of expenditure on manure may be entirely lost.

Bush or Berry Fruit.—These, as a general rule, are gross feeders and benefit by liberal applications of manure and water, particularly so if the soil happens to be of a sandy or gritty nature. Farmyard, cow or horse manure will give good results, but the latter, unless partially rotted, is not as suitable as the two former. Applications are best made during the autumn by spreading the manure in a circle of four feet diameter at the rate of about half a hundred weight to each plant, where the plants are matured specimens, and forking it into the soil at a depth of about nine inches. A dressing of basic slag on the surface, at the rate of four ounces to the square yard, should be given after the forking over has been done. In the early spring a dressing of wood ashes or sulphate of potash should be given, the former at the rate of six ounces to the square yard and the latter at the rate of two ounces to the square yard. If no slag was applied in the autumn an application of superphosphate at the rate of two ounces to the square yard should be made, and as growth commences a little nitrate of soda or nitrate of ammonia (Ammonium nitrate) should

be given during showery weather at the rate of one ounce to the square yard. Two applications within a month of each other will be of value. Where seaweed is available a compost can be made by using equal quantities of seaweed and horse manure, and applying it as a topdressing in the spring. Soot, shoddy from woollen mills, &c., rape dust, hop cleanings and some other by-products of industries are valuable if applied with care. The supply of lime in the soil should be regularly maintained, and annual or biennial dressings of about four ounces to the square yard will prove of great value. Bushes so cared for will produce top quality fruit, and it is only the fruit of top quality that is worth growing. Poultry, pigeon, or sheep droppings, if available, should be mixed with about six times the quantity of loam or sand where the garden soil is tenacious to form a compost before being applied to the soil. In such a case less of the other fertilisers should be subsequently used.

Liquid manures, made in the usual manner to supply the different necessary food elements, will also be of value during the growing season, more especially where extra large fruits are desired. Such manures should always be applied in a dilute form.

Stone Fruit (Apricots, Peaches, Nectarines, Plums, Cherries, &c.).—With the stone fruits great care should be taken at all times, as they appear to be more sensitive in many ways than most fruits. Inefficient drainage, lack of lime in the soil, over dryness at any period, a plague of aphides, overdoses of fertilisers containing nitrogen, are all factors which may militate quickly against success. As a general rule it can be said that over-manuring for these trees is worse than none at all, and that lime, which should be used freely, is the dominating factor.

With young trees very little farmyard manure should be used, and that only in a partially rotted condition. Basic slag, superphosphate, wood ashes and sulphate of potash should be used as recommended for the Berry fruit. Occasional applications of soot will supply the necessary nitrogen. Where the trees are getting older, carrying heavy crops and showing signs of reduced vigour, recourse should be had to heavier application of farmyard manure, poultry compost and liquid manures (taking care to keep the branches and fruits sufficiently thinned).

Apples and Pears.—In the earlier stages of growth these also need careful treatment to secure the natural vigour without that extreme sappiness which is inimical to successful cultivation. For the first three years, excepting on sandy or chalky soils, cultivators should rely mainly on potassic and phosphatic fertilisers, but where little growth is being made owing to the stocks being of a too dwarfing nature, or through other causes, attempts should be made to induce vigour by means of hard pruning, heavy applications of farmyard manure, occasional applications of nitrate of soda and of liquid manures, keeping the balance by judicious applications of basic slag or other phosphatic fertilisers.

Wood ashes, sulphate of potash, seaweed or other suitable substances containing potash, will help to produce those large, rich-coloured fruits so often seen at exhibitions. Many of the very old trees in this country can be made really profitable by such means, and by careful attention to spraying and other cultural details.

With such trees their feeding roots are often at

some distance from the trunk of the tree and from the soil surface. A circular trench cut out about 18 inches deep and 12 inches wide at some distance from the tree trunk, and occasionally filled with liquid manure, will work wonders. Holes can also be bored with a crowbar at intervals of five feet and similarly filled. In other cases the only other remedy for such trees will be top-grafting with some suitable variety, as recommended in gardening books published over a century ago.

It will be understood that in the peaty, sandy and limestone soils more potash will, as a rule, be necessary than in the loamy and clayey soils. The latter are, of course, more prevalent in this country, thanks to the Ice age, although the underlying rock, some distance below, may be a limestone.

2. *Superior Work*.—Clean plots, freedom from weeds; general appearance of plots.

3. Quantity and quality of produce, freedom from disease and insect pests, also misshapen specimens; proportion of essential or necessary vegetables, such as Potatoes, Cabbages, &c., and of those which are not absolutely necessary but are frequently used and *expensive to buy*.

SHOW COMPETITION.

1. Judges will look for *faulty* as well as *good* specimens.

2. Large and small specimens mixed together obtain less points than specimens which are uniform in character.

3. Size does not necessarily indicate quality.



CYCLAMEN, GIANT WHITE. 14 months from seed.

Photo by A. Slater.

At the moment supplies of potash are still difficult to obtain; German supplies are coming in and prices should, therefore, drop.

W. H. J.

Competitions for Allotment Holders.

HINTS TO COMPETITORS.

The following notes may prove helpful to those Allotment Holders who intend to compete for prizes at the shows, and also to those who purpose entering for the Plot Competitions. The judges of allotments usually take the following points into consideration:—

1. *Arrangement of Crops*.—Provision for rotation and successional crops—*e.g.*, early and late varieties of different vegetables, winter vegetables, such as Potatoes, Leeks, Celery, Turnips, Carrots, Parsnips, Onions, &c.; seed beds for special crops; utilisation of odd spaces for "Salad" crops, such as Lettuce or Radish (or other intercroppings).

4. Judges usually pass over those specimens which are over ripe, damaged, bruised or soft, or show unmistakable signs of the scrubbing brush too vigorously applied.

5. Collections of vegetables should, as a rule, be made up of distinct kinds, such as Turnips, Cauliflowers, Peas, Beans and Potatoes, rather than of two or more varieties of the same kind—*e.g.*, British Queen and Arran Chief Potatoes, American Wonder and Pilot Peas, &c. The number of Potatoes, Cabbages, &c., of each variety included in a collection of vegetables should be the same as the number allowed in the individual vegetable classes—*e.g.*, 6 Potatoes, 3 Cabbages, 6 Onions. Several points are specially considered in dealing with individual exhibits—*viz.*, Potatoes should not be extremely large, unsightly, spotted, or have deep eyes. They should be even sized, clean, spotless, free from holes or excrescences, with shallow eyes and undamaged skin.

W. H. JONNS,

Instructor in Horticulture.

Amateur Fern Growing.

By H. D.
(Continued.)

Gently secure—they are very easily injured—every one found and transfer it to the green-house. Hunt frequently for them, and get all that can be found. These are carnivorous beasts; they live on eggs, larvæ, and small insects. They burrow through loose earth and under plants and leaves, and if they come across the eggs or grub of the weevil, will doubtless make a hearty meal off them. And, again, like the frogs, that is their business, and they will keep always at it, and the constant hunt tells

had been changed except the introduction of the centipedes, so it is perhaps fair to give them the credit of the victory. There is some confirmation of this in the fact that no new centipedes were introduced after about the fourth season, and that in two or three years the characteristic leaf-cuttings began to appear again and become more abundant. This would look as if the centipedes had diminished in numbers either by escaping through crannies in the frame work of the house, or, what is more likely, were devoured by the frogs. It would be well therefore to make an occasional hunt amongst rubbish in the garden and catch any centipedes that may be found, so as to keep up the stock in the house.



WATER LILIES AT HOME.

in the end. It is, unfortunately, true that our favourite frogs refuse to discriminate between them and lawful game, so swallow them with as much gusto as they would a "s Slater." So it is up to us to keep up the supply and hope for their agility and secretive habits to escape the frog danger till they have done some good work amongst the weevil grubs.

The season after we thought of this plan of fighting the weevil there was no appreciable change in the devastation it caused. The second season we felt sure there was less damage done. The third season we were really surprised to find how little injury there was compared with even the previous year. The fourth season it was with difficulty any trace of it could be found, and not one weevil was seen the whole year. It is quite certain that something had occurred to diminish its numbers very greatly, and nothing

There is little more to be said. The two most important things to remember in managing a rock fernery in an unheated green-house are:—(1) Do not water the ferns overhead; (2) leave them without water during the winter months.

This article has been written by a town-dwelling amateur for amateurs, and gives them the result of over twenty years' experience. His fernery has not all the advantages set forth in the advice here given, for from time to time ideas have suggested themselves, which it is certain would have been a great improvement had they been thought of when the fernery was being made. For instance, any stone available was used, which included much limestone, also river sand was used for the compost, which also contained much limestone sand. It took us some time to find the explanation of why some ferns—*e.g.*, *Blechnum spicant*, utterly refused to grow with us, and we

have never been able to grow them, for to do so would require complete renewal of the rockery from its foundation. One example is enough.

We fear the professional gardeners will rub their eyes, especially at the list of ferns we propose to grow without any protection from frost except the glass above them. The fernery has been visited by professionals, and when they have seen certain ferns growing luxuriantly, asked how we managed to keep the frost out in winter? and when told that we did not, they appeared so sceptical, that we believe they did not believe, but did not like to say so. The list given is much smaller than the list tried. Many refused to adapt themselves to our conditions, so we did not persist in trying to force them to do so, but tried another kind, and so on. One example: *Pteris tremula* is a well-known, handsome common fern. It does so well in the warm weather that it is impossible to harden it off for winter, as fresh fronds go on appearing right into the autumn. The result is that they get sickly with the cold and damp off, or are actually killed by the frost. The "damping" and mildew rapidly spreads to other fronds, and the few that do not actually die are greatly disfigured and most unsightly. Nevertheless, it will probably struggle through till spring, and again make growth, but it has been thrown back so much that it has nothing of its former vigour and beauty. The second winter, if there is any decided frost, usually finishes it. On the other hand, *Pteris tremula crispata* seems more hardy, and we have had a plant growing well for the last six or eight years, which included, remember, the frosts of 1916-17 and the frost of 1917-18. No more severe condition could be given than to place a plant in a hanging wire-basket, within two feet of the glass roof, and one foot of the glass front, yet under these conditions we have some adiantums now that were bought over 17 years ago, and there never has been any artificial heat in the house all that time. The secret is—keeping them dry in winter. If one has succeeded in inducing town plant lovers, to try fern culture, under conditions which do not necessitate either too great sacrifice of time, too much slavery, or too much disappointment in results, one will feel that a great additional pleasure has been added to that afforded by writing these notes.

H. C. D., DUBLIN, 1918.

Primulas for the Garden.

(Continued.)

P. CAPITATA is much involved in nomenclature, various plants having been given under this name—viz., *P. pseudo-capitata*, *P. lacteo-capitata* and *P. Mooreana*, the last perhaps the best of all, larger in size, more perennial in habit, and with fine heads of deep violet coloured flowers in late summer and autumn. It has been grown at Glasnevin for many years, at first as *P. capitata*, but was subsequently named as above by Professor Balfour of Edinburgh. The other species alluded to are smaller, more "mealy," and usually die after flowering, but all, including *Mooreana*, "set" seed abundantly, and a pinch should be sown every year. *P. Winteri*, introduced a few years ago, flowers early and is much like a pale blue "Primrose" with powdery leaves. It objects strongly to overhead moisture, especially in winter, and should be

planted in good soil and under an overhanging stone. It can also be grown as a pot plant, and so far as our experience goes requires to be artificially pollinated to get seeds, and even then they are sparingly produced, and after sowing may lie many months before germinating. The incomparable *P. Reidii* is also from the Himalaya, and belongs to a section which contains several gems, but alas! few of them are good doers, and although seeds of several have been received at Glasnevin repeatedly, and have germinated freely, nothing would induce them to pass the seedling stage. *P. Reidii*, however, succeeds fairly well as a pot plant and is a beauty for the Alpine house with its heads of large, pure white flowers two or three together. Out of doors it succumbs to winter damp.

P. sikkimensis, the so called Himalayan Cowslip, is well known to lovers of Primulas and is a good doer, perennial and flowering freely. Seeds are produced in quantity and germinate readily. It is well to raise young stock periodically, for though perennial the old plants weaken and become unsatisfactory.

P. reticulata is in the way of *P. sikkimensis* and grows equally well.

CHINESE PRIMULAS.

Turning now to Primulas from China we are confronted with a vast array of species, many of them perhaps as familiar to readers as some of the older ones from Europe for the reason that they have been grown and distributed in large quantities within the last ten years or so. Quite a number of them are excellent bog plants, and a wonderful race of hybrids is already in existence from crosses between various species. Looking at the moisture lovers first we have *P. Beesiana*, a strong grower sending up tall scapes carrying whorls of pale purple flowers; *P. Poissonii*, rich purple, but at Glasnevin likes drier conditions than some others; *P. pulverulenta*, a vigorous species carrying whorls of reddish purple flowers on "mealy" scapes; *P. Wilsoni*, in the way of *P. Poissonii* but with smaller flowers; *P. Bulleyana*, a gorgeous species carrying whorls of orange yellow flowers on tall scapes, and the taller *P. helodoxa* with clear yellow flowers, and the smaller, but altogether delightful, *P. Cockburniana*, with whorls of deep, rich orange flowers; the last named is the least perennial of the set mentioned, and seeds, which are produced freely, should be sown annually. *P. Cockburniana* does better in rich loam and leaf-soil and in a more elevated position than in the bog proper. *P. X Unique*, Warley Hybrid, &c., are the result of crossing *P. pulverulenta* with *P. Cockburniana*. Another Chinese species becoming popular is *P. Veitchii*, somewhat in the way of the Japanese *P. Sieboldii* but botanically, of course, quite distinct. It grows well in peat, loam and leaf-soil, and flowers freely, bearing numerous whorls of pink flowers. It is worthy of note that seedlings of this and other species such as *Bulleyana*, *Cockburniana*, &c., vary considerably in size of flower and intensity of colour, and, beyond doubt, as time goes on, much improved garden forms or strains will be produced. Quantities of *Bulleyana* and *Cockburniana* have been raised and planted out at Glasnevin, and some of the forms when they flowered proved wretched in their puny, narrow-petalled flowers and washy colour; needless to say they were weeded out.

P. lichiangensis, also in cultivation, is in the way of *P. Veitchii* but less hairy; it is just finding its way into gardens.

P. sinolisteri is in cultivation but has not proved altogether satisfactory in the open at Glasnevin.

In the so called *Muscarioides* section are several species of interest and which are now to be found in gardens. *P. deflexa* forms rosettes of leaves and bears purplish blue flowers arranged in a close spike on a fairly tall scape; it is not a plant of great decorative merit, the flowers being small and deflexed, as the name suggests. *P. Giraldiana* is another of the same set, at first called *P. Muscarioides* owing to the *Muscari*-like flower spike. *P. Littoniana* is the best and most striking of the lot, producing from the rosette of hairy leaves a remarkable spike of flowers with red calyx and blue corolla; in its opening stages this is a remarkable and pretty plant. All of them require to be raised frequently from seeds. They flourish in a mixture of loam and peat, but it must be well drained. *P. Forresti* and *P. rufa* are two delightful yellow-flowered species. The former has an unhappy knack of dying off in winter and is evidently averse to our moist winter climate, but *P. rufa* is more satisfactory. The two species are remarkably alike in other respects. They seed freely and the seeds germinate readily.

P. Knuthiana has powdery leaves and heads of pale lavender flowers. It has not succeeded out of doors and is only doing moderately well in pots.

P. Maximowiczii is disappointing, forming as it does a rosette of handsome leaves but producing a tall scape bearing several whorls of chocolate-red, poor flowers; it has no decorative merit.

P. nutans when well grown is a fine species, bearing several comparatively large blue flowers, but it has not been an unqualified success in the open at Glasnevin. Perhaps it was planted in too moist a position.

P. pulchella and *P. pulchelloides* are both good and worth persevering with, but they have not proved good doers here; they grow freely enough in summer but the crowns invariably damp off in winter, even in pots in a cold frame.

P. secundiflora is an interesting and pretty plant with drooping purplish red flowers, but it has an irritating habit of failing to appear in spring.

P. sinopurpurea gave great promise at first, flowering freely both out of doors and in pots; it did not appear the following spring after flowering on the rock garden though pot plants continue to grow. It is an attractive species densely furnished with golden farina and carrying a head of large flowers, violet coloured with a white "eye." It is possible, of course, that, like many others, it fails after flowering. On this and other points we have much to learn regarding many of the newer species from China, and first results are not to be taken as conclusive.

P. vinciflora comes freely from seeds; large quantities were raised here a year or two ago, carefully pricked out in boxes and wintered in a cool house. They never reached the flowering stage. A second attempt is in progress now and youngsters pricked out last summer have survived so far and are beginning to grow; *P. pinnatifida* is in the same state.

P. Willmottiae, like a small *P. Forbesii*, flowered once in a pot and vanished without pro-

ducing seeds; I cannot speak of it, therefore, as a garden plant.

In the collection at Glasnevin there are numerous other Chinese species more or less in the experimental state and from a cultivator's point of view I cannot say much of their garden value. That many of them are beautiful there is no denying, but up to the present there is difficulty in keeping them, our damp winter being the chief drawback. *P. Menziesii* was raised under the name of *P. tibetica* but is quite different from that species, which is a minute plant bearing tiny pink flowers. *P. Menziesii* on the other hand forms rosettes of hairy leaves and produces tallish flower scapes surmounted by a loose head of rather large blue flowers, which are sweetly scented. Seeds are usually produced in fair abundance; but the plants are not so good after flowering though a few form new rosettes and grow again the next year; it is best, however, to sow seeds whenever they can be got.

AMERICAN PRIMULAS.

These are few in number, and fewer still are common in gardens.

P. farinosa var. *magellanica* alluded to under *farinosa* is easily grown from seeds and grows well under conditions that suit the type.

P. Parryi, from the Rocky Mountains, has reddish, purple flowers each with a yellow eye; they are borne in umbels on stems springing from among fairly large leaves. It flowers in spring and should be planted in loamy soil in a half shade situation.

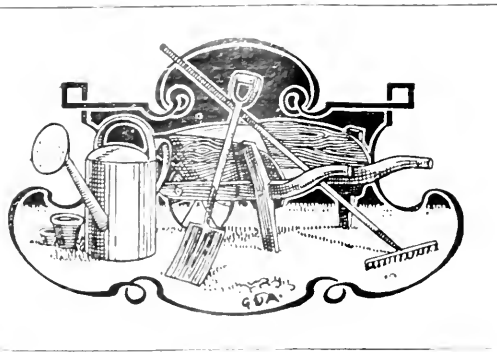
P. Rusbyi is an attractive species from New Mexico and is rather sensitive to winter damp. The flowers are reddish purple, each with a yellow eye and a mealy calyx; they are borne in umbels of six or more on stems eight or nine inches high. It is easy to grow in a pot, and seeds freely when pollinated. On the rockery, as stated, it often fails in winter.

P. suffrutescens is a most interesting species of a sub-shrubby nature, and hailing from the Sierra Nevada. For some reason it does not succeed well at Glasnevin, even as a pot plant. Good specimens have been obtained on several occasions but in a short time they begin to lose colour and drop the leaves. One is inclined to fall back on the "lime hating" excuse, but further trial is perhaps necessary. It has been tried in peat but was no happier there than in loam, and no better in sun than in shade. When doing well it bears fine trusses of pink flowers and narrow leaves on rather woody stems.

J. W. B., Glasnevin.

Anemone apennina.

IN the list of herbaceous plants for shady places (IRISH GARDENING, page 18) the above is included. *Anemone apennina* deserves more than passing notice. For planting in the grass, partially shaded by trees or shrubs, it is a fine subject and is most effective when established. It is equally effective in the semi-wild garden at Stormans-town House, Co. Dublin. Grown under such conditions the *Anemone* is a glorious sight at the present time (mid-April).
D.



Allotments.

ALLOTMENTS IN PUBLIC PARKS.—We understand the London County Council have given notice to the holders of allotments in their parks that the land may again be required by the Council early in 1920. The Board of Agriculture and Fisheries do not propose to interfere with the decision arrived at by the Council, pointing out at the same time that the cultivation of allotments in parks was purely a war measure, and that the Council have to consider the purposes for which the land was originally acquired. This will no doubt inflict a hardship on many who worked hard at a time when the foodstuffs of the nation were anything but plentiful. Many of the men responded to a personal appeal from the Prime Minister. May we recall those words uttered in the spring of 1917:—"It is essential, therefore, for the safety of the nation—for the life of the nation—that we should put forth every effort to increase production for this year's harvest and the next, and that we should do it immediately." The part allotments played in helping to increase the food supply has received testimony from the highest quarters, and surely it is not unreasonable to hope that where it is necessary to remove allotments from parks, that other land should be provided, so far as is possible within the reach of the workers' homes. If the public authorities provide means of recreation such as bowling greens and golf courses, facilities can also quite easily be given to meet what is now an earnest demand for allotments.

CLUB-ROOT.—Allotment holders frequently visit the markets at this period of the year to purchase young plants of Cabbage and Cauliflower. A word of advice is necessary. Before buying the plants should be examined very carefully, and if the roots appear swollen and fleshy they should be left alone, it being highly probable such plants are infected with club-root. It is possible, of course, that the swellings may have been produced by the gall weevil or the Cabbage root-fly, and cases sometimes occur when the same plant is attacked by all three. To the plotholder it is all "grub." Although Cabbage root-fly and club-root are often on the same plant, there is nothing of the grub about club-root, which is a fungoid disease, and a most pernicious one. It is quite capable of remaining at rest in the soil when there are no Cabbages or turnips to attack, and then resume operations when any of the Cabbage family are planted. Diseased plants should always be burnt or buried deeply. Plants left to decay in the ground infect the soil for a number of years. Unless lime is applied where

the disease is found sooner or later it will be impossible to grow Cabbages.

TURNIPS OR GREENS.—A standard plot, 30 feet by 90 feet, would require to get a good dressing for club-root from three to five cwt. of lime. Allotments which have been under cultivation a few years are, owing to neglect in destroying diseased plants, hot-beds of disease.

POTATOES.—The whole of the crop should now be planted, although good crops can be procured from sprouted sets planted early in May. In the case of early Potatoes which have appeared through the soil, the tops should have finely broken soil drawn to them if any danger is suspected from frost.

Transplanting crops; if this work could be done in showery weather so much the better. Early grown Cauliflowers, Lettuce and a few greens will want planting. Some of the crops will also require thinning out, and this also should be done in showery weather if possible. If Carrots and Parsnips are thinned out to half their required distance, when the final thinning is done many of the plants will have grown large enough for use. It is a good plan directly seedlings appear through the ground to commence hoeing. Besides checking weeds this will benefit the seedlings. If the Dutch hoe were used more on plots less watering would be required. Kidney Beans will require sowing; we find the most convenient way is to sow a double line. Sow the seeds about two inches deep and six inches apart. The seedling plants are particularly susceptible to cold, damp weather. Runner Beans should also be sown. A good many odd corners can be used for Beans, especially where there are fences. Cheap method of staking is to grow the plants by a wall facing south, using string for them to run. Quite a good crop can be obtained by nipping off the shoots and making the plants form a small bush.

BEET should now be sown. When the seed is sown too early the roots become coarse and the plants are apt to go to seed. Sow in drills one foot apart, covering the seed one inch deep.

VEGETABLE MARROW.—Marrows grow very well on the heaps usually seen on plots. They will, however, grow equally well on the surface of the ground. On new plots a raised mound can readily be made with turves, and the centre filled with decayed refuse and loam. On these mounds sow several seeds together about one inch deep, and cover them with a small pot—a jam pot will do. Remove the weaker plants, leaving only the strongest. All that is then required is occasional watering and thinning of the shoots. Some protection may be necessary at night for young plants when sown early. A favourite way is to raise young plants on a shelf in the house, and transplant outside when one new leaf is made.

ONION FLY.—The maggot of the Onion Fly chiefly attacks the spring-sown plants. It is not nearly so prevalent on autumn-sown plants. Therefore the best advice that can be given is to sow Onions in the autumn. Failing this, raise young plants inside and transplant during April and May. If preventive means are to be any use it must be done *before* the fly deposits eggs on the Onions. Egg laying begins in April or May according to the weather. One part soot to two parts of lime is useful, also paraffin mixed with sand. If it is noticed that the leaves turn yellow in the early stages of growth, and some of the plants droop, remove these, as several generations are produced in one season. G. H. B.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

BIENNIALS.—Early in the month Wallflowers may be sown, also Sweet Williams, Canterbury Bells, Verbascums and Foxgloves. It is best to sow in shallow drills at least one foot apart to facilitate hoeing between. This is also the best time to sow Aquilegias, Delphiniums, Lychnis chalcedonicum, Gaillardias, and St. Brigid Anemones for autumn planting.

INCARVILLEA DELAVAYII.—This lovely plant succeeds well if sown outdoors now in a partially shaded position. In autumn carefully take up the young tubers, which will have formed by then, and store them in moist sand in a frost-proof structure. The following April these may be planted in their permanent position in good soil, to which some peat has been added, burying the tubers to a depth of about four inches. A few of them usually flower the first year, but they will be in full beauty the second year. As the plants are apt to die out after a few years it is advisable, and quite easy, to save a pinch of seed annually and grow on in the manner described above.

ANNUALS.—Attend well to the thinning of annuals sown in April, and dust regularly with soot to ward off slugs. Any gaps may be made good with the thinnings, which should be carefully transplanted, and well watered in.

After the middle of the month a start may be made with the planting of the less tender bedding plants, such as Calceolarias, Asters, Marguerites, Antirrhinums, &c.

During showery weather, when other work is impracticable, Box edgings may be clipped, grass verges trimmed, and Violet runners prepared for planting, which should be done as early in May as possible.

THE VEGETABLE GARDEN.

The earliest border of Potatoes should have constant attention. Keep the soil drawn up over the shoots until they are earthed up to the fullest extent. After that it is advisable to have some light, strawy litter available, with which they may be covered in the event of a late frost.

THE GARDEN SWEDE is a useful vegetable to supplement the winter supply. They may now be sown in drills drawn at 18 inches apart. A very little nitrate of soda sown in the drills at the same time will hasten the young seedlings past the Turnip Fly stage. Early in the month sow also, Beet, Salsafy, Savoys, Colewort, and the latest Broccolis. After the middle of the month it will be safe to sow Runner and Dwarf Beans in the open.

NEW ZEALAND SPINACH may also be sown now in shallow drills five feet apart. This is indispensable where a constant supply of Spinach is required. It revels in the hottest weather when other Spinach is rushing to seed, and one sowing made now will provide a constant supply of young tips from July until frost destroys the plants.

Trenches should now be made for Celery. If single rows are preferred the trenches should be 1 foot wide, 9 inches deep, and 3 feet apart. For double rows they should be 18 inches wide and

four feet apart. The ridges may be cropped with Lettuces and Dwarf Beans, which will be finished before the soil is required for earthing up the Celery.

MARROW and **TOMATO PLANTS** must be gradually hardened off to have them ready for planting out in June.

The earliest Leeks may now be planted in deep drills drawn with a hoe, or in trenches, if the latter method is preferred. The rows should be 18 inches apart, and the plant one foot apart in the rows.

Sow Autocrat Peas now for August picking. This variety under proper conditions keeps free from Mildew, and is a continuous cropper.

THE FRUIT GARDEN.

Mulching should now be attended to, especially in the case of trees planted late in the season. It is a good plan also to mulch all wall fruit trees, as the mulching renders the soil less liable to crack in hot dry weather, and also makes it possible to attend to the trees during wet weather, by obviating the injurious effects of treading on wet and sticky ground. In these days of manure scarcity it is not possible to mulch all the trees with stable litter, neither is it desirable for the health of the trees. My practice is to mulch part of the trees with manure, and the rest with lawn grass mowings, alternating the treatment each year.

GRAFTS.—Freshly grafted trees should be examined at intervals. In dry weather the clay sometimes cracks, and when this occurs some damp moss should be bound around it. Provide supports for the young shoots growing from the scions, and let the supports extend beyond the growing tips so as to prevent birds alighting on these and breaking them off. Many promising grafts are ruined by the neglect of this precaution.

AUTUMN FRUITING RASPBERRIES should be thinned to the required number of shoots, so that these may develop to the best advantage. In dry weather keep the hoe going amongst fruit trees and bushes, and remove all suckers from the base of trees as they appear.



PRIMULA DENTICULATA CASHMIRIANA.

Midland and Northern Counties.

By W. ROBERTS, Gardener to Lady Emily Bury
Charleville Forest, Tullamore, King's County.

KITCHEN GARDEN.

THIN newly sown Asparagus and watch beds in bearing, and do not cut these too late. It is an old maxim that none should be cut after the 1st June, and it is not a bad one, though I fear in many cases circumstances prevent its being adhered to. Tomatoes may be planted out of doors in sunny spots where houses are not available, though I have yet to meet anyone in districts I write for who speaks very enthusiastically about their results. The case usually is, a few fruits ripen, and the rest have to be hung up, &c. However, I think the principal cause of failure is too strong and rampant a growth, "and ordinary intelligence will suggest how to overcome this," too little attention to removal of lateral growth, portion of the leaf, &c., and generally letting all the light and air possible to the fruit.

Prepare Celery trenches and transplant whenever ready, and avoid anything in the way of a check. There are several methods of planting. Some recommend the bed system, others three rows to the trench, others two and others one, the distance between the trenches being, of course, the number of rows that have to be earthed up. Personally, I favour the single row, as they can be planted fairly close and are easier handled in every way, as well as practically trenching the plot for future crops.

Sow Beans for late crop and Dwarf and Runner Beans for main crop. Plant out Brussels Sprouts, Cauliflower, Lettuce, &c., and thin Carrots, Onions, Parsley, Spinach, &c. Marrows, Gourds and Ridge Cucumbers may be planted out towards end of month, but means of protection will have to be kept handy in case of frost. Give litter to Strawberries in good time to keep the fruit clean, and just before or at flowering time a dressing of superphosphate, a small handful to each plant, will be found very beneficial.

FRUIT HOUSES AND GARDEN.

Peaches by all reports I have heard promise very well this year in either heated or unheated structures, the latter having apparently escaped the amount of frost capable of injuring them. I find that in cold houses or cases it is a good plan to let them grow a bit more before thinning or disbudding than is usually done where heat is employed, and not be too methodical as to syringing, especially on any but very fine mornings. This latter remark applies also to cold vineries. Disbudding in this case is "the sooner done the better." *Re* vineries, I have two small houses that have been grown entirely without artificial heat for the last two years, and at present they promise as well as ever I saw them, and one of them contains muscat of Alexandria only, so that if this sort of thing continues one can only wonder at the number of years we have been "chasing the shadow." Apples, Pears, Plums, &c., promise very well, also bush fruits, and given favourable weather conditions good crops should be the order. A spraying of arsenate of lead to those that have set their fruits will help to banish

the many leaf pests, moths, &c. Attend to newly planted trees, especially on walls, with water during dry, harsh weather. Keep the hoe going among all bush fruits and other plantations, as the old saying of a "stitch in time," &c., applies very much here.

FLOWER GARDEN.

Many half-hardy annuals may be sown in the open ground during and towards the end of this month, according to locality, and quite a brilliant display may be had for a very small outlay. I always think they look best in masses rather than in lines, though, of course, the amount of space available affects this. There is such a plentiful supply of these on the market nowadays, and of such diversity in colours, that the most fastidious taste may be satisfied. The ground should not be too rich, and fairly firm, and a little soot raked in before sowing will help to ward off insect trouble, and when the seedlings are big enough, that is, when they have grown what is called the "rough leaf," thin out pretty severely, otherwise the best results will not be obtained. The thinning should be done during showery or dull weather, and, if necessary, water must be applied with a fine rose or sprayer to settle the soil round those left to flower. These remarks apply to hardy annuals which have been already sown. Annuals previously raised in heat may be hardened off ready for planting out in beds or borders, and in favoured districts the old fashioned bedding plants "which alas! have in some places quite disappeared," may be put into permanent quarters, but further north and in colder districts it is best to defer until next month. Grass on lawns will now begin to grow rapidly and must be mown regularly to obtain the necessary amount of sole or foundation. I find this a good time to prune many of the early flowering shrubs; this means simply cutting out the old flowering wood and generally keeping the bushes in shape.

Killing Weeds.

A good Arsenical Weed-killer is the most effective and lasting preparation for keeping garden and other walks free from weeds, and, unfortunately, during the war the price of arsenic advanced more than that of almost all other chemicals. This year, however, it has dropped enormously in price, and Messrs. Mark Smith, Ltd. (the makers of Smith's "Perfect" Weed-killer, Liquid and Powder) are able to announce a corresponding reduction in the prices of their Weed-killers. Mr. D. M. Watson, Horticultural Chemist, 61 South Great George's Street, Dublin, is Irish Agent for these preparations, and his advertisement (giving prices, &c.) will be found on page viii. Smith's Weed-killer is recognised throughout the United Kingdom as the Standard Weed-killer.

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Irish Gardening

Contents

	PAGE	Notes—Contd.	PAGE
Rhododendrons at Rowallane in April (Illustrated)	81	Cratægus tanacetifolius (Illustrated)	87
Campanulas of Annual or Biennial Duration (Illustrated)	82	Apple Blooming Periods	87
Buttercups for the Rockery and Small Bog	84	Housing, Health, and Horticulture	87
Notes—		The Nursery	88
Magnolias (Illustrated)	86	Dodecatheons (Illustrated)	89
Osmanthus Delavayi	86	Insect Pests of Fruit	90
Rhododendron Augustini	86	Apple Aphides	90
Rhododendron flavidum (Illustrated)	86	The Rose Garden	93
Viburnum Carlesii	86	Allotments	94
Prunus Sargentii	87	The Month's Work—	
		Southern and Western Counties	95
		Midland and Northern Counties	96



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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

VOLUME XIV
No. 160

JUNE
1919

EDITOR J. W. BESANT.

Rhododendrons at Rowallane in April.

By H. ARMYTAGE MOORE.



I HAVE been glad to read a note in IRISH GARDENING for April on early flowering Rhododendrons, and, in view of the much increased interest now being so deservedly taken in the genus, I venture to refer to some of the species which have flowered here during the present month. At the outset I may mention that very little injury has so far resulted from frost here this month, and that Rhododendrons have consequently enjoyed a favourable season for flowering. Both Rh. Davidii and Rh. oreodoxa (?) have bloomed here, the latter in some profusion. The description of the former as given by "B." in the note previously referred to does not correspond with the plant under this name originally sent out by Veitch of Coombe Wood, nor with that described in Bean's "Trees and Shrubs." It is also, I believe, doubtful if the true Rh. oreodoxa is in this country. The plant here is undoubtedly that given by Bean as Rh. hematocheilum. In any case, neither species has, so far, proved itself worthy of much enthusiasm.

A well-grown plant of the Rh. sutchuenense has expanded some fine trusses of pale lavender-pink flowers of good size and substance. Set amidst long, pointed leaves of rich green, the aspect of the whole plant is very striking, and its whole character and aspect entitle it to rank high amongst Wilson's introductions. Rh. fulgens, near by, brilliant of colour, stiff and compact of truss, provides a striking contrast, and makes the enthusiastic hybridist wonder as to how these two would mate. Rh. Shilsoni, with over fifty well-developed trusses in scarlet-crimson, stands out as magnificent, whether viewed from near or far. Horticulturally, one can scarcely imagine anything finer than such a plant in the bright light of an April day. Rh. ciliatum, probably unrivalled for freedom of

flower, yields solid masses of bloom in the rock-garden, but I must make special mention of the Cierhays variety, a lovely flower of palest shell-pink, delicate and refined, like a miniature Griffithianum. Rh. oleifolium, somewhat in the way of racemosum, but better both in colour of flower and habit of growth, promises well as a rock-garden shrub. Rh. flavidum, pale primrose, a delicate little flower of infinite grace and charm amidst diminutive, bronze-green leafage, stands attractively at the base of a bold rock on a carpet of Viola gracilis. A very conspicuous plant here is the as yet unidentified No. 8939 of Forrest. The flower is of a brilliant scarlet-crimson, freely-borne, even on young plants, in a loose truss, each individual bloom well shown. The plant has a good bushy habit, and has so far proved itself perfectly hardy here. From every point of view it would seem to possess all the qualities of a really first-class shrub. Its identification will, no doubt, soon be forthcoming. So far it is said to bear affinity to Rh. neriiflorum, a very attractive species which has not as yet flowered here.

For such as Rh. polylepis (Harrovianum), longistylum, Sargentianum, Yanthinum, and its variety lepidanthum, there is no apparent cause for enthusiasm, though lack of good colouring is partly recompensed by hardness of constitution and freedom of flower.

Rh. lutescens improves each year, and though the pale yellow flowers have neither size nor lasting qualities, there is a grace and lightness about a good plant in full bloom which has a decided attraction.

Rh. Hanceanum flowers here in May, and should not, therefore, be included in this category, but it well deserves recognition, and as a low-growing, free-flowering shrub for rock-work it must prove a valuable introduction.

From seed of this species I have been fortunate enough to raise a pigmy sport—just a dark green cushion bursting with creamy-yellow flowers, a sort of mossy saxifrage on a grand scale. In a very different class stands *Rh. Thomsoni* of richest blood-red crimson, a noble plant for any garden, and one, moreover, which is proving of especial value to the hybridist. The pale yellow flowers of *Rh. campylocarpum*, carried literally in hundreds of trusses on a well-established plant here, seem to attract visitors almost more than any other. It is certainly a very striking object at its best, and the hardiness of the plant is by no means the least desirable of its attributes. Of quite a different type comes *Rh. Jacksoni*, a caucasicum hybrid of weeping habit, with rosy-pink flowers—a hardy, free-flowering plant, of which the white variety forms a very desirable associate. There is here a distinctly richer-coloured form of the typical *Rh. racemosum*—a plant that proves a happy companion for the lovely *Osmanthus Delavayi*.

Rh. arboreum in its many forms needs no detailed reference, and yet it must always rank as an indispensable adjunct to the *Rhododendron* garden. It is, perhaps, seen at its best when boldly massed for distant effect in woodland clearings or partially shaded positions. Similar treatment may well be applied to *Rh. campanulatum* and its hybrids.

Rh. Davidsonianum, *Rh. charianthum*, and *Rh. Baileyi* (a new species from the Brahmaputra River of considerable promise) are coming into flower as the month closes. They are each distinctly good shrubs of much ornamental value—the first two being of the *Yunnanense* type, and the latter of the *lepidotum* series.

26th April, 1919.

Campanulas of Annual or Biennial Duration.

In the beautiful family of Bellflowers there are some distinctly annual, some biennial, and a few that if not strictly biennial are at least unsatisfactory perennials.

The annuals, naturally, should be sown every spring as soon as the weather is suitable in April, and it is usually best to sow where they are to flower in preference to transplanting from pots or pans.

The biennials may be sown in May or June in pans of sandy soil, and should be kept close and shaded in a cold frame until germinated; admit light and air gradually, and when the

seedlings are sufficiently advanced to handle easily, prick out into pans or boxes as many as are required. If returned to the frame and kept lightly shaded for a week or ten days, in sunny weather, the seedlings will make rapid headway, and by autumn will be sturdy young plants. If well grown in early autumn some may be transferred to the border or rock garden, as the case may be, otherwise planting-out may be deferred to the first favourable opportunity in spring.

Campanula abietina, if not strictly biennial, is certainly not a reliable perennial, and it is well to sow a pinch of seed annually to ensure always having a stock of flowering plants. The true plant is quite a desirable one for the rock garden, being of tufted habit, forming dense mounds of rich green leaves, surmounted in early summer by many lovely bright blue flowers. The total height when in flower is about nine inches, but this may be exceeded if the plants are growing in shade.

Campanula barbata is another species which often lives more than two years, but after the first time of flowering is rarely satisfactory. Again then it is well to sow seeds annually to have in stock a supply of vigorous young plants. This is one of the most beautiful members of the genus, the flowers being carried on a spike about a foot high, the charming pale blue flowers being furnished with long, soft hairs, hence the specific name *barbata* (bearded). There is a fine *pure white variety* which comes true from seeds, and a colony of this flowering on the rockery is hardly exceeded in beauty by any other hardy plant.

Campanula Erinus is an annual, dwarf in stature, and slightly hairy in all its parts. The flowers vary through blue, pink, and white, and are rather attractive when seen in a mass. It is suitable for sowing on the rock garden among small-growing bulbs that will die down early, or about the nooks and crannies of stone steps in sunny positions.

Campanula longistyla is a biennial suitable for the border or rockery. It is a tall grower, reaching two feet in height in suitable positions. The first season a rosette of leaves is formed lying close to the soil, and the following year a tall spike of beautiful dark, purple-blue flowers is produced. At flowering time the foliage becomes rather sparse, and it is advisable to plant somewhat closely to ensure a good mass of colour.

Campanula macrostyla is an annual, but should be sown in slight warmth in early spring, and grown on for planting out in May, or it may be sown in autumn and wintered secure from frost, thereafter pricking out in spring and growing on for planting out. When

in flower, the plant is composed of many branching stems bearing numerous flowers, which keep on opening in succession for several months in summer and autumn. The flowers are reddish purple, with deeper reticulations.

to flower. It is what botanists call *monocarpic*—that is, it flowers only once. As a rule, however, plants two years old, if well grown, will produce their striking spikes of large, pale blue flowers. This is a rockery plant, and rejoices



RHODODENDRON YUNNANENSE AT GLASNEVIN.
Still one of the finest of the Chinese species.

The leaves and stems are furnished with stiffish hairs, and the style and stigma are very prominent. A group of this species always attracts attention.

Campanula mirabilis can scarcely, perhaps, be described as a biennial, since the plants may live several years and become strong enough

in a horizontal position not too fully exposed to the sun. A crevice exposed to the declining rays of the afternoon sun seems to suit it well, and certainly when in flower it is one of the most attractive of Campanulas, as our illustration, reproduced from a former issue, well shows.

Campanula patula is a biennial, usually sowing itself freely and coming up in the paths and elsewhere in the rock garden. It is a tallish plant, approaching two feet when in flower, and is then distinctly attractive in border or rockery. The flowers are produced in loose panicles, are long-stalked, and light blue in colour; quite a good plant, liking a fairly good soil. It is occasionally found wild in England.

Campanula pyramidalis, commonly called the Chimney Bellflower, is a well-known greenhouse biennial, but is quite hardy under proper conditions. If grown entirely in pots dense pyramidal spikes of blue or white flowers are produced four or five feet high; grown under harder conditions, the plants do not attain such proportions, but are nevertheless attractive. If grown almost entirely in the open, a light, well-drained soil is essential, and a quantity of old mortar rubble added will be an advantage. In the Botanic Gardens at Glasnevin many seedlings continually appear in an old wall, in the reserve part of the grounds, near which the pot plants from the conservatories are stood when out of flower. The seeds formed on these plants find their way into the crannies of the wall, and grow there and flower, when in turn they shed their seeds, and so the wall is never without a crop of the *Campanula*.

Campanula sibirica is a biennial with somewhat the habit of *C. longistyla*, but the flowers are neither so large nor so good in colour. The flowers are drooping, of a bluish violet, and the whole plant is furnished with stiff hairs.

Campanula spicata is a biennial producing spikes of closely-set blue flowers. The spikes

attain a height of a foot or rather more in suitable conditions, and, owing to the habit of the plant, it is advisable to plant rather closely for effect.

Campanula thyrsoides, also biennial, makes a suitable companion to the last named species. It produces dense spikes of pale yellow flowers in the same manner as the preceding, and is equally attractive on the rockery.

Seeds of all should be collected carefully as soon as ripe, and, with the exception of the strictly annual species, it is advisable to sow at once. Where a large and comprehensive collection of plants is grown it is by no means an easy matter to remember to sow seeds of all those that are biennial or monocarpic. It is, therefore, a good rule to sow a pinch of seed as soon as it is ripe.

J. W. B.

Buttercups for the Rockery and Small Bog.

AMONG the many delightful plants which gladden our hearts in springtime none are more interesting than the various species of *Ranunculus*, this being the botanical name of the Buttercup. True, they are mostly yellow, but they vary considerably in habit and height, in size of flower, and shape of leaf, and one or two have white flowers. Speaking generally, their requirements are simple, though there are exceptions; nevertheless, a collection of these Buttercups will give a great deal of pleasure with very little trouble.

The following have all flowered during May, and were a source of much pleasure, contributing much to the beauty of the rock garden in a season when most plants were late, and we were weary waiting for the tardy blossoms of our treasures.

Ranunculus alpestris is a dainty gem with tiny, lobed, dark-green leaves, from among which arise the flower stems, scarcely more than three inches high, carrying the pure white flowers.

R. amplexicaulis is a general favourite, growing from six to nine inches high, and producing glaucous, acuminate, stem-clasping leaves surmounted by numerous pure white flowers, each with a central "boss" of golden-yellow stamens.

R. carpaticus, the Carpathian Buttercup, is a handsome, robust species, bearing fairly large palmate leaves, and above them striking golden-yellow flowers; height when in flower about a foot.

R. cassubicus is attractive, reaching a height of about nine inches when in flower. The lower

NOTICE

READERS are invited to submit questions bearing on gardening in any of its branches. It is our desire to stimulate and encourage gardening in Ireland, and we are in touch with experts who will be glad to give every assistance.

We are always open to consider articles, and would be glad to receive photographs—of gardens or plants for publication, if suitable; senders will oblige by stating whether payment is desired in the event of publication.

Contributions should reach the Editor not later than the 15th of each month.

leaves are comparatively large and kidney-shaped, but the leaves on the flower stems are finely divided; the flowers are a bright, shining yellow.

R. gramineus, with narrow, grass-like leaves, is an interesting and pretty plant, flowering in early May, the bright, yellow flowers appearing freely and making a good show.

R. illyricus is a taller grower, but quite suitable for the small bog. Reaching a height of from fifteen to eighteen inches, it bears numerous divided leaves, furnished with soft

The three-parted leaves are softly hairy on both surfaces, the segments of the stem leaves being narrow and nearly entire.

R. Thora is attractive, though the flowers are rather small, but produced two or three on each stem. The leaves are roundish, extending up the flower stem, and are roundish in outline, inclined to be glaucous.

Several other less common species are occasionally met with in cultivation, but the above are those most readily obtainable. All flourish in moist, but well-drained peat and loam, and



THE TANSY-LEAVED THORN (page 87)

Crataegus tanacetifolia.

hairs and bright yellow flowers throughout May and later.

R. millefoliatus has very much divided basal leaves, and the almost leafless flower stems bear fairly large rich yellow flowers.

R. monspeliacus is an interesting tallish grower, reaching eighteen inches in height. The leaves are divided into three lobes, and are silvery in appearance, due to the covering of soft, woolly hairs. Each flower stem carries several bright yellow flowers.

R. montanus is one of the earliest to flower and one of the most attractive, the glistening rich yellow flowers just above the dark-green leaves at once arresting attention. Height when full-grown about six inches.

R. nyssanus bears abundantly its bright yellow flowers on stems a foot or more high.

are suitable for the small, boggy recesses found in most rock gardens, where they are happy in company with the smaller *Meconopses*, *Dodecatheons*, *Primulas* of various kinds, *Cypripediums*, and many other moisture lovers.

B.

Floral Fete: Chelsea Hospital Grounds.

JUNE 24TH, 25TH AND 26TH.

THE Royal Horticultural Society is organising a great Fete to help to defray the cost of sending large consignments of tools and seeds to our Allies whose countries were devastated during the war.

The event will be a notable one, and all will wish that fine weather may prevail, and that a huge financial success will result, betokening the gratitude of all gardening people for the immunity of our own gardens and fair lands from the ravages of war.

Notes.

Magnolias.

THE late season has suited the Magnolias extremely well, and though in some earlier districts the flowers of some suffered from severe weather in the end of April, yet in the Dublin district they have seldom been finer.

Magnolia conspicua, the Chinese Yulan or Lily Tree, is one of the most attractive of the larger growers, and bears abundantly its large pure white flowers on the practically leafless branches.

Magnolia Soulangeana, another popular kind, is a hybrid between *M. conspicua* and *M. obovata*, and differs from the former in that the flowers are always more or less coloured with reddish purple on the outside of the petals. This hybrid and its forms are more common in gardens than the pure white Yulan, and in favourable seasons makes a truly fine display. In cold districts the Magnolias are probably better grown as wall plants, for though generally hardy enough, they enjoy warmth and sunshine, and respond in a profusion of flowers. In Scotland they are frequently found adorning walls.

Magnolia stellata is a much smaller shrub than either of the preceding, and flowers earlier, with the result that not infrequently a frosty night ruins the season's display. Nevertheless, it is such an attractive plant when furnished with its pure-white star-like flowers that it is worthy of a sheltered position, where it could be afforded some artificial protection.

Osmanthus Delavayi.

EACH succeeding year emphasises the value of this Chinese shrub for warm and sheltered positions in our gardens. It forms an attractive flowering evergreen bush on one of the lawns at Kew, though a plant on a warm south wall is flowering more freely. The growth of the shrubs under notice suggest that in the milder parts of the country *Osmanthus Delavayi* would make a most useful and attractive hedge of moderate size.

A sturdy bush, thickly clothed with small, dark green leaves, it is ornamental throughout the year. In April the branches are wreathed with small, dainty, white, tubular blossoms, which are pleasingly fragrant. Cuttings made of moderately firm young shoots root freely under a bell-glass towards the end of the summer. The bushes appear to thrive in most soils, provided they are well-drained and freely cultivated.

A native of Yunnan, *Osmanthus Delavayi* was first introduced to Europe by the Abbé Delavayi, who sent seeds to M. Maurice de Vilmorin in 1890. A. O.

Rhododendron Augustini.

THIS unique and attractive Chinese species flowered freely during the early part of May, and is likely to become popular when better known and more plentiful in commerce.

The colour of the flowers varies in different plants, some being slightly darker than others, but the prevailing tone is blue, though pink and white varieties have been noted. In its bluest forms it is a most pleasing shrub, growing at least four feet high, and very likely more in time. The leaves are oblong lanceolate, scaly on the under surface, and with a strong aromatic fragrance when bruised. It is much to be hoped that the new Chinese species of *Rhododendrons* now flowering annually will be raised from seeds, cuttings, or layers in preference to grafting.

Rhododendron flavidum.

AMONG the wealth of *Rhododendron* species introduced from China during the last twenty years, this is one of the most distinct. It can be best described as a small shrub of close, bushy habit, eminently suited to the rock garden, or the sheltered, narrow border of select small shrubs, which each year becomes increasingly interesting. In happy surroundings *R. flavidum* forms a rounded bush during April, freely clothed with primrose-yellow blossoms about one inch in diameter.

It is figured in the *Botanical Magazine*, tab. 8326, as *R. primulinum*. A native of West Szechuen, China, the species was first introduced by Mr. E. H. Wilson in 1905.

Cuttings made of the half-ripe young shoots root early in August, inserted in peaty soil and covered with a bell-glass. A. O.

Viburnum Carlesii.

THIS delightful shrub from Korea is one of the successes of the present backward season. Rarely has it flowered more freely, charming all with its compact corymbs of wax-like white flowers and delicious perfume. A well-drained position in good loamy soil suits it perfectly, while the neat habit of growth is an advantage where space is limited. The only drawback, if such it may be called, is that the leaves are apt to be attacked by *black fly* in summer. A timely application of an insecticide will do away with this.

Prunus Sargentii.

A NATIVE of Japan, this Cherry, one of the *Cerasus* group, flowers during April, in advance of the popular *pseudocerasus* and *serrulata* varieties. In most years—1919 being no exception—the trees are a wealth of blossom. The individual flowers are about one and a half inches in diameter, arranged in clusters up to six in number, a glowing rich bluish pink in colour. The fruit is a small, black Cherry.

Prunus Sargentii was first received at Kew from Professor Sargent of the Arnold Arboretum in 1893. Numerous packets of seeds have come to hand since. Native Japanese trees are said to attain a height of 60 feet to 80 feet, furnishing valuable cherry-wood timber.

A. O.

Cratægus tanacetifolius.

(The Tansy-leaved Thorn.)

THIS handsome Eastern thorn is not by any means common, and yet it is one of the most ornamental and useful. Slow-growing, forming a much-branched roundish head, it is eminently suitable for planting as a lawn specimen in public parks or pleasure grounds. The much-cut leaves are hairy on both surfaces, and the fragrant white flowers, produced in typical clusters, are often an inch or more across.

Fruits are freely produced, and are nearly as large as small crab-apples and of a yellow colour when ripe. They are sweetish when mature, and in a public garden are much sought after by the small boys of the neighbourhood who are not content with those lying on the ground, but have recourse to frequently drastic methods of augmenting the supply. Although fruiting freely, the percentage of fertile seeds produced is small, accounting, perhaps, for the unfortunate fact that most of the plants offered for sale are budded or grafted, and indeed other species altogether are often offered under the name of *C. tanacetifolius*.

Apple Blooming Periods.

THE first variety to flower this season, amongst a collection of nearly 200, was Irish Peach, which commenced to open on the 1st May. The last variety to open its flowers was Royal Jubilee, on 18th May. This fact is of interest as showing a difference of nearly three weeks in the periods of blooming of these two varieties. Bramley's Seedling, Bismarck, Allington Pippin, Golden Spire, and many others were in full bloom about the 12th May. At the present time (24th) the following are in full bloom and quite fresh:—Annie Elizabeth, King Edward VII., Sandringham and Royal Jubilee, the latter, however, being the last to open. D.

Housing, Health, and Horticulture.

MORE than one writer in IRISH GARDENING has before now advanced the view that the right place for a man's plot is beside his house.

Not long ago we made the suggestion that the housing difficulty and the allotment difficulty might be conveniently solved by restricting the number of houses on an acre to such a number as would allow of a decent sized garden being attached to each.

It is satisfactory to find that our Parliamentary representatives rightly place great importance on the provision of gardens and open spaces in any scheme of housing adopted in Ireland. In the debate on the second reading of the *Irish Housing Bill* Sir Edward Carson pleaded for care in the selection of sites for houses; "he had seen street after street in schemes which had been carried out most uninteresting in look with no playgrounds, not a particle of garden, or flowers, or trees anywhere visible." Mr. Joseph Devlin followed and likewise emphasised the importance of flowers. "One of the finest things the London County Council had done was when they got a vacant piece of ground to grow flowers." Continuing, Mr. Devlin said: "But in Ireland they rushed up a series of commonplace buildings, like a great workhouse, with neither flowers nor growing grass nor anything of beauty to fire the children with a sense of what was beautiful." Here, at last, is a genuine attempt to make the garden city movement compulsory.

Gardening people and flower lovers generally, whether amateurs or professionals, will heartily endorse the claim for more garden space whether in the form of parks and playgrounds or as gardens in connection with the proposed new dwellings. Apart from the general uplifting influence of fresh green grass, beautiful flowers and trees, gardening is the most unselfish of hobbies, consequently those who are fortunate enough to possess gardens, large or small, are always ready to help others to acquire a garden, and generally assist in stocking it when obtained.

This question of public gardens, children's playgrounds and street trees has a profound interest and importance for the Councillors of our cities and towns. Beyond doubt the time is at hand when every city and town in Ireland will have to organise and maintain its gardens and playgrounds, and the planting of street trees can no longer be left in a haphazard sort of way, but must be done systematically by skilled men who know their business. Large cities like Glasgow, Edinburgh, Liverpool, Manchester, Birmingham, &c., and hundreds of smaller towns, find it necessary to have a properly equipped Parks Department controlled by a Parks Committee. Belfast has a system of parks with a superintendent in charge, and Dublin has recently made a move in the same direction controlled from the Borough Engineer's Department, and skilled men are being employed to carry out the horticultural schemes of the city council. Street trees are now becoming a feature in Dublin; disused spaces, formerly a reproach and an eyesore, are being cleaned and formed into playgrounds for the children, and a new park is in course of formation at Clontarf. All this is to the good and an encouraging sign of an awakened interest in something more than bricks and mortar.

The opportunities for gardening in Ireland are unrivalled, and in the great housing scheme which

we hope soon to see in operation there will be endless opportunities of providing for gardens, large and small, public and private.

It is therefore of immediate importance that all councils and corporations concerned should consider how they are equipped to deal with the gardening part of the scheme.

The allotment movement has still to be kept in mind, and its undoubted success shows clearly how keen the majority of men and women are to have a garden. In several recent appointments of park superintendents it is significant that one

The Nursery.

During this month cuttings of many early flowering shrubs and rock garden plants may be taken. At this season they can mostly be rooted under bell glasses or in cold frames, and any quantity required may be put in when ready. It is essential that the soil be made very sandy and that it be raised sufficiently to ensure quick drainage. Some prefer pure sand, and it answers very well provided the cuttings can be removed as soon as they are well rooted; other-



RHODODENDRON DAVIDSONIANUM AT GLASNEVIN (page 82).

of the stipulations was that the appointed person should be in control of the city allotments, and should also be prepared to give lectures and practical instruction to ploholders, or to provide such instruction.

We earnestly counsel the citizens of every town of any size in Ireland, especially where there is congestion, to urge on their representatives the necessity for appointing a competent gardener to supervise and manage the gardening affairs of the town or city; to assist ploholders, lay out and maintain open spaces and playgrounds, advise on the selection of trees for streets, and generally to look after all matters in connection with gardening; and it is just as essential that there should be a gardens or parks committee as a lighting, water, gas or electricity committee. J. W. B.

wise they grow so freely and ramify to such an extent in the sand that they receive a severe check when disturbed.

If the frame or bell glasses are placed in a sunny position it will be necessary to attend closely to watering in bright weather otherwise the soft cuttings will soon shrivel up. On the other hand, if in a shady position too much water will result in "damping off." The latter position is the most convenient for most people who cannot afford time to be constantly on the watch, and if the cuttings are well watered immediately they are put in little more will be wanted until they are rooted; the cuttings should be aired for a few minutes every fine morning to allow of the escape of superfluous moisture.

During June cuttings of Forsythias, Rock Roses,

and other shrubs making young growths, may be inserted, and mossy Saxifragas, double Arabis, perennial Candytufts, and other rock garden plants which have passed out of flower and are making new growths will usually strike freely.
X.

Dodecatheons.

AMERICAN COWSLIPS.

THE Dodecatheons are spring or early summer flowering plants as we know them, though American writers separate them culturally into

They are truly perennial, rarely failing to appear every year, and seem indifferent to the hardest winter.

The first to flower here is *D. Jeffreyi*, a robust grower, forming long, fleshy leaves and producing a tall flower stem of two feet or more, carrying numerous drooping flowers of a reddish purple colour.

Soon after *Jeffreyi* comes *D. integrifolium*, an altogether smaller plant with shorter leaves and the flower stem not more than a foot or so high. The flowers are of a rich rosy purple and look extremely attractive in a half-shady position.



CAMPANULA MIRABILIS (page 82).

two divisions, viz.—those which flower in winter and rest during summer, and those which rest in winter and flower in July and August. In our climate no such well marked difference is observable, at least among those ordinarily found in cultivation. Again, some botanists have considered that the majority of the forms belong to *D. Meadia*, but others have separated them into distinct species.

In any case for the rock garden in shady, moist positions the Dodecatheons are of the greatest value and are always admired. They may be grown well in company with the smaller *Meconopses*, *Primulas* such as *P. japonica*, *sikkimensis*, *reticulata*, *denticulata*, *secundiflora*, &c., and add much interest and beauty to the moist, half-shady recesses usually devoted to such plants.

About the same time *D. Meadia* begins to throw up its flower spikes, and in one or other of its forms continues for several weeks. The colour of the flowers varies considerably in this species, and varietal names have been given to several. Variety *lilacina* has lilac purple flowers, *album* pure white and very attractive, while others have rosy purple flowers.

D. Lemoinei represents a series of garden forms the result of crossing *D. Meadia* and *D. Jeffreyi*. They are of robust habit, free flowering and giving various beautiful shades. *Atropurpureum* is well described in its varietal name; *compactum* is a dwarf form with purplish violet flowers, and *robustum* is a strong grower with purplish rose flowers.

D. Clevelandi is a vigorous grower with purplish

blue flowers, and grows up to eighteen inches in height, making a fine display.

D. Hendersoni has thick, blunt leaves and rosy purple flowers on stems about a foot high.

Other forms occasionally met with are D. ellipticum, D. alpinum, D. patulum and D. frigidum, but the nomenclature is somewhat confused, and it is by no means certain that the plants passing under these names are always right. B.

Insect Pests of Fruit.

BLACK CURRANT MITE.

THIS pest is one that should be carefully studied by every gardener concerned with fruit production. No absolute remedy has yet been discovered that will completely eradicate it from fruit plantations when once it has gained admittance. Men of science are devoting much time to the study of the life history and habits of the Mite, and also to devising means for its destruction. This is a work in which all can help. The practical cultivator by close observation may learn much, and by experiments in the way of spraying throughout the seasons as far as possible, and by removing *big buds* in the dormant time may do much to add to the sum of our knowledge concerning this menace to the future of the Black Currant crop.

The months of May and June are said to be the time when the mites are on the move seeking new buds in which to take up their quarters. Spraying at this time should be destructive of vast numbers, and would possibly, in a season or two, clear a plantation. The right spray fluid to use is still a matter of experiment, but there is some probability that lime-sulphur solution may be efficacious owing to its adhesive properties, though it is properly a fungicide. Paraffin emulsion is also worthy of consideration, while Quassia Extract has also been recommended.

Apple Aphides.

By FRED. V. THEOBALD.

South Eastern Agricultural College, Wye, Kent.

THE so-called "Aphis" or "Blue Bug" blight of Apples, and to a minor extent of Pears, is in some years one of the worst ills fruit-growers and gardeners have to contend with in this country. The terms Aphis, Dolphin or Blue Bug "blight" are common names in all fruit-growing districts. They apply to damage done by several species of plant lice or aphides.

Out of the eight species of aphides recorded as attacking the Apple in Great Britain only four are of general importance. These are: (i) the Blue Bug or Rosy Apple Aphis (*Aphis malifolia*, Fitch); (ii) the Green Apple Aphis (*Aphis pomi*, De Geer); (iii) the Oat Apple Aphis (*Siphocoryne avena*, Fabr.), and the Woolly Aphis or American Blight (*Schizoneura lanigera*, Hausmann).

The following article deals only with the first three, which are leaf, blossom, shoot or fruit feeders, unlike the Woolly Aphis, which feeds on the wood and roots as a rule, but which in very bad attacks may spread also to the leaves and fruit. This latter insect is dealt with in the Board's Leaflet No. 34. By far the greatest amount of harm is done by the *Aphis malifolia*, but in some years and in certain localities the Green Apple Aphis (*Aphis pomi*) and the Oat Apple Aphis (*Siphocoryne avena*) are of consider-

able importance. The life histories of many Aphides are now well known. A definite annual migration may take place between two totally different host plants, as is seen in the case of the Hop Aphis (*Phorodon humuli*), which annually migrates from the hop, to winter on the Sloe and Damson, in the egg stage, and in the various "gall-forming" Poplar Aphides (*Thecabius agnus*, &c.), which leave the Poplars in summer and fly to such plants as *Ranunculus*, *Gnaphalium*, &c., and then back to winter on the poplars in the egg stage.

On the other hand there are many kinds which apparently have erratic and local migratory habits. The Apple Aphides—*Aphis malifolia*, *Aphis pomi*, and the Woolly Aphis (*Schizoneura lanigera*) come in this group, at least as far as the writer has been able to trace in this country.

The more salient features of most destructive plant lice on fruit are known, and as such alternate host plants as damsons, sloes, plantains, &c., cannot be exterminated, the matter is more of scientific than of practical importance.

Damage Caused by Apple Aphides.—The damage occasioned by the three species of Apple pests mentioned below is mainly to the foliage and young wood, but also to some extent to the fruit, which they stunt and deform; whilst one, the Oat Apple Aphis (*Siphocoryne avena*), may damage the blossom as well as the leaves; and in some seasons similar damage is done by the Blue Bug or Rosy Apple Aphis (*A. malifolia*). The Green Apple Aphis (*A. pomi*) mainly attacks the young shoots, and so densely do the insects cluster, on them that they check the growth. They do not, however, produce such distortion as is caused by *A. malifolia*. The last-named, by means of the constant puncturing of the leaves by its proboscis, causes these to curl up, and beneath this shelter the lice reproduce, in certain seasons, at a great rate. The foliage becomes smothered and poisoned by their honey-dew and other excretions and turns brown; in some cases the lice produce, earlier in the year, yellow or rosy-red galled masses on the leaves. Later they may swarm on the leaf stalks, shoots and fruitlets, and by their punctures deform them. The leaves may fall and only a few stunted and galled Apples remain. The crop is now and then completely ruined by this pest and the trees have a serious set back for the next season and probably for a longer time.

The Green Apple Aphis (*A. pomi*) may on occasions produce a certain amount of leaf-curl, but never to the same disastrous extent as is caused by *A. malifolia*. Moreover, it never occurs in such vast numbers. It mainly feeds upon the young top growth, and although producing but little deformed growth, it nevertheless checks the health of the tree, especially when on young stock.

The Oat Apple Aphis (*S. avena*) does little harm as a rule, except where it invades the blossom trusses, in which case the writer has very often seen appreciable damage done. It produces little or no leaf curling, appears earlier, and matures and flies away much sooner than the other two kinds.

Appearance of the Species.—

(a) ALATE OR WINGED VIVIPAROUS FEMALES:—

1. *A. malifolia*.—Cornicles black, rather long. Abdomen red and black.
2. *A. pomi*.—Cornicles black, rather long. Abdomen green with black lateral spots.

3. *S. arena*.—Cornicles pale brown to green, rather short, constricted at base and apex. Abdomen green, with black lateral spots.

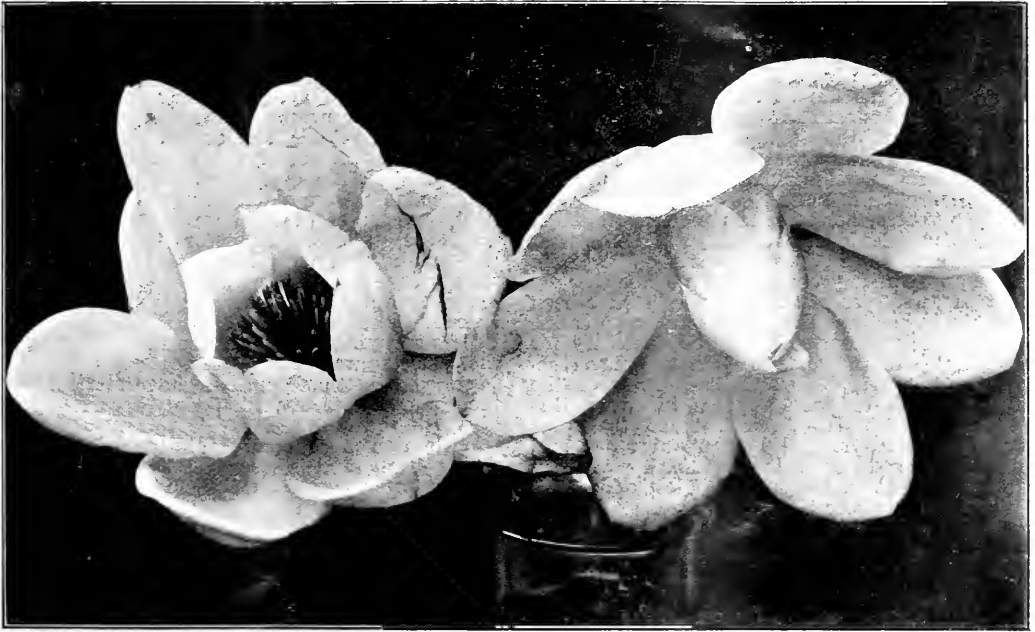
(b) APTEROUS OR WINGLESS VIVIPAROUS FEMALES :—

1. *A. malifolia*.—Blue-black, slatey-grey or pink. Cornicles long, black; fat, rounded, and more or less mealy.
2. *A. pomi*.—Green; not mealy. Cornicles long and black.
3. *S. arena*.—Green; not mealy. Cornicles rather short, constricted at base and apex, brown and green.

(c) OVIPAROUS FEMALES: all APTEROUS :—

1. *A. malifolia*.—Yellow, lemon yellow, dull greenish yellow or grey; head dark.

black eggs are laid singly, and are at first pale; they hatch out during early April. The young at first live freely on the tops of the bursting buds and then enter them. As the young mature into what are spoken of as "Mother Queens," the leaves may either curl up and protect them, or the insects may remain for a short time fully exposed. These females soon produce living young with great rapidity in some seasons, and the progeny of these as they grow cause the leaf to curl up and enclose them and their parents. Owing to the constant sucking of the aphides and their excrement, the leaves become scorched, and sometimes fall off. As the insects increase in numbers they pass to the shoots and stop the growth of the internodes, and deform them, a marked "stubby" appearance being produced, even on fairly old trees.



MAGNOLIA CAMPELII (soft pink).

Cornicles pale yellow to dusky yellow, darker at tips.

2. *A. pomi*.—Green to dull yellow; head darkened, cornicles black, cauda black.
3. *S. arena*.—Green, dull green, greenish yellow or yellow; head brownish. Cornicles short, brown to black; constricted at base and apex; cauda dusky brown.

(d) MALES :—

1. *A. malifolia*.—Winged. Abdomen dull reddish and deep blackish-brown to brown.
2. *A. pomi*.—Apterous. Dull greenish-yellow, green or yellowish-brown.
3. *S. arena*.—Winged. Abdomen black and dull green, with dark lateral spots.

Life-Histories.—The Blue Bug or Rosy Apple Aphid (*A. malifolia*) passes the winter on Apples and Pears in the egg stage. The small, shiny,

In June and July these apterous viviparous females give rise to a winged generation of insects, which often occur in dense masses on the branches and stems, and are sluggish in habits. When very abundant they swarm all over the tree; when less plentiful they seem to collect under the branches. Previous to the alate appearing, the apteræ also seem to wander about in a restless manner, and many are caught in old grease-bands. Most of the winged dolphins die, but others undoubtedly fly away in July. Where these latter fly to in this country has not yet been traced. In America and Canada they are said to fly to the plantains (*Plantago* spp.). None have yet been found on the plantains in this country, either above or below ground. The writer has carefully noted some thousands of these plants pulled during the past season for rabbit food, and no trace of *A. malifolia* has been seen in a district where this species is very prevalent. Moreover,

the writer has completely failed to get alate of *malifolia* to reproduce on *Plantago*. On the other hand they have done so on the Guelder Rose (*Viburnum opulus*). The only plant louse found commonly on plantains in Britain is the green *Aphis plantaginis* of Kaltenbach, so often seen on the roots, leaves and flower stalks; it is a species of very similar structural form but is undoubtedly distinct. The writer has failed repeatedly to cultivate this species on the Apple. It is a well-known and "attended" species.

Alate females of *malifolia* commence to return to the Apples late in September, but the majority do so in October and even on into November. These returning migrants produce the apterous egg-laying females and, so far as the writer has traced, some alate males; but some of the latter appear later, and it is probably normal that the alate males fly back from some host plant to the Apples, at about which time the oviparous females are mature. On two occasions the writer has found this insect on the Apple trees right through the year.

The Green Apple Aphis (*Aphis pomi*), which mainly lives on the top shoots and is found also densely packed beneath the leaves or in scattered groups, may curl the foliage, but never to the same extent as does the Blue Bug. Like the latter it winters in the egg stage on the Apple and Pear. The writer, however, has recently found it in several localities on thistles (*Carduus*), both as alate and apteræ. In two instances alate taken from the apple have produced large colonies when transferred to species of *Carduus* which have been covered with muslin. This is what may be called an "erratic migration." It may be necessary for the continuity of the species, yet it is nevertheless very unusual; just as the migration of the Woolly Aphis to the elm appears to be in this and some other countries. In any case, the aphid returns to the Apple and Pear in autumn, and the eggs laid on them hatch out from mid-April to early May. It increases very slowly at first, but later in June and July it frequently does so very rapidly, especially on young stock. Winged females may be found from the end of June to well into August, and these migrate to other Apple and Pear trees, and, it seems, sometimes to thistles. Undoubtedly this species occurs normally all the year on the Apple and Pear, both in Great Britain and America. In October the sexual forms appear; the males, unlike those of the other two species dealt with here, are wingless. The oviparous females, when pregnant, swarm on to the shoots and deposit their eggs. The ova are pallid at first, but soon become shiny black; they are laid in masses all over the young wood.

The Oat Apple Aphis (*Siphocoryne avenæ*) also passes the winter on the Apple in the egg stage, and sometimes on the Pear. The eggs, which are mostly laid singly, hatch out in April, and the young are to be found on the first leaves. The wingless females coming from the larvæ continue to increase throughout May, and by the end of the month alate females appear and fly off until mid-June to corn, especially to cultivated and wild oats, but also to barley, wheat and grasses. By October, the corn feeders give rise to winged females, which fly back to the Apple and Pear and produce young, which become egg-laying females, and later on alate males return and fertilise them. The pregnant females then lay eggs on the trees, often as late as November.

Prevention and Treatment.—The matter of prevention is very difficult, if not impossible, for the various host plants of the Aphides cannot be removed. This may be specially noticed in the case of *Aphis malifolia* and *Siphocoryne avenæ*, for it cannot be hoped to destroy all the countless plantains or whatever other plants they attack, and certainly not the cereals and wild grasses.

Reliance must consequently be placed on treatment. This may be carried out by (1) timely spraying, or (2) dusting or dry-spraying the attacked trees. If either of these methods be adopted in the autumn, so as to kill the exposed oviparous females and thus prevent egg-laying, it may prove a preventive in the true sense, for there can be no blight in the following year. The treatment, or what may be called the preventive treatment in the autumn, must be very thorough, as a few apterous egg-laying females left may deposit eggs, and in the spring the young from them may produce a vast progeny.

Any spray used against these pests must be applied heavily, really as a "wash," and not a fine mist. The spray should be applied, when possible, after rain. If rain comes after the spraying so much the better, as the moisture carries the wash into all curled leaves and crevices. On the other hand a powder or dust-spray should be applied in dry weather.

In the case of the leaf-curling Apple Aphis (*A. malifolia*) it is almost useless to spray when the leaf-curling has definitely started, as even with such very penetrative washes as nicotine and pyridine a large number of the insects are not touched and subsequent swarms may occur. Unless spraying for the "Blue Bug" is done when the insects are quite young, that is, before the so-called "Mother Queens" have started to curl the young leaves, it is doubtful if spring spraying is worth the cost.

With the more open-feeding species, such as *Aphis pomi* and *Siphocoryne avenæ* it is very different, for any good aphid wash will kill them readily. Unfortunately they are not the most pernicious forms. It seems to the writer, from various experiments carried out during the last 15 years, that autumnal spraying is of special value in this particular case. Spraying to kill the egg-laying forms of all three species, which might be called quasi-prevention, appears to be the most satisfactory method of control. When the Apples and Pears are harvested, fruit growers are not anxious to spray again, but the writer feels convinced that if they wish to do away with the often serious damage caused by the leaf-curling aphids, they should do so.

Another method of prevention has been found most satisfactory for the "Blue Bug," namely spraying with lime and salt. This should be done when the buds are swelling and just beginning to burst. The young hatched aphides are killed, and many that may hatch later are prevented from entering the opening buds. Some authorities advise lime wash alone, but the writer has found that even a small quantity of salt has a most beneficial effect. The wash is made of 1 to 1½ cwt. of lime; 5 lb. of salt; 100 gallons of water.

The lime has to be slowly slaked and run through coarse sacking into the water in which the salt has been dissolved. With suitable sprayers this thick wash can be put on with ease, but readily-cleaned nozzles should be used. The best white lime, and as pure as possible, must be

obtained. This also undoubtedly checks attacks of Apple Sucker, cleans the trees, and the materials are washed off into the soil and greatly improve the health of the trees.

For killing most young aphides in spring soft soap and water alone are sufficient if the fluid is applied heavily, just after the buds have burst. The most successful results obtained have been with 10 lb. of soft soap to 100 gallons of soft water.

If the treatment is left until the leaves are well opening out then nicotine at the rate of 8 ounces Pyridine has been found effectual if used at a greater strength, namely 40 ounces, and as it is much cheaper than nicotine it may be recommended. Its penetrative power into curled leaves, however, does not seem to the writer to be as great as nicotine. Pyridine as an aphid killer is certainly of great value as a substitute. As it is the curling of the leaves that make aphides so difficult to deal with even with nicotine or pyridine, we have to look for other treatment. Hence it is in autumn, when all three species return to the Apples and Pears and do not curl up the leaves, that it seems they should be attacked. The aphides are then freely exposed, and at that time a more potent and normally cheaper insecticide may be safely used, namely, paraffin emulsion. Any possible damage to the foliage will not matter and, moreover, a heavy washing may be given and the drippings will fall on the defoliated matter and kill a large percentage of the egg-laying females that may have fallen with the leaves. Thus the possibility of a spring brood, in any case a large spring brood, is negatived. If this cannot be done, then lime spraying should be employed in early spring.

One other point in connection with the "Blue Bug" is worthy of comment, namely, the part ants play in distribution. The writer has time and again watched ants, which attend the plant lice for their rich excretions, carry the aphides off, not only from leaf to leaf, but from tree to tree. There is no doubt whatever that ants play a very prominent part in the dispersal of the "Blue Bug" over a plantation. Consequently all possible steps must be taken to eradicate ant nests. This may be done by digging in naphthalene or pouring boiling water into holes made in the nests.

Natural Enemies.—Aphides have several natural enemies. None appears to control them, however, until they have done the harm. These natural enemies are (1) parasitic insects, (2) predaceous insects, and (3) fungoid enemies. The parasitic enemies are small hymenopterous insects, called Chalcid Flies; the predaceous are Lady Bird Beetles and their larvae or *Coccinellidae*; the Aphid Lions; or larvae of the Lace Wing Flies (*Chrysopidae*); the Slug or Leech-like larvae of the Hover Flies (*Syrphidae*); and the maggots of certain Gall Midges (*Cecidomyiidae*). The latter seem to be most abundant in North Britain. None of these, however, appears to be of any practical help on a large scale, and no reliance can be placed on them as a means of checking "Aphis Blights."

The fungoid enemies, of which there are many, also appear too late to stop an epidemic, and when they attack late colonies, that is after all the damage has been done, a few Plant Lice escape, enough to produce, under favourable circumstances, a blight in the following season, with which the fruit grower has to contend.—*Journal of the Board of Agriculture*, April, 1919.

The Rose Garden.

SUCKERS.—These are a never-ending source of trouble to the rose grower and are invariably worst just when the legitimate growths are beginning to lengthen. The cutting back of the shoots in March and early April, usually after some growth has been made, naturally reduces the area over which the sap was flowing and consequently the roots, which belong to the stock, are over supplied with moisture, and latent buds on the stock are stimulated into growth and appear through the soil as suckers. Their early removal is absolutely necessary if the rose proper is to survive, and it is well to examine all cut back roses carefully and get the suckers away as completely as possible. Sometimes they appear at a considerable distance from the plant, in which case they should be followed back to the base and carefully pulled off; in every case the suckers should be got away as close back to the stock as possible. Early and prompt attention in spring and early summer will nearly rid the beds of suckers for the season.

But few roses are in flower now in the last week or so of May, with the exception of *Rosa Willmottiae*, a mass of small, pale pink blossoms; the lovely but ephemeral *Rosa Ece*, which on a hot wall opens its small, rich yellow flowers to the warm sun; *Rosa Hugonis*, primrose yellow, and a white-flowered, four-petalled, unnamed species from China, apparently near to *Rosa sericea*. Teas, hybrid Teas and hybrid Perpetuals are only making growth, though June will see many of them blossoming. Green fly is already taking toll, but dilute tobacco water or Quassia Extract will soon put an end to the attack. The leaf-rolling maggot or caterpillar is also in evidence and should be assiduously looked for and destroyed.

Broccoli.

THIS most useful vegetable was unusually good this spring, particularly during April and early May, when other vegetables were very scarce. The varieties *Snow's Winter White*, *Leamington*, *April Queen* and *Late Queen* gave heads of fine size and extra good quality. The plants received no manure, having been planted on ground from which a good crop of *Tripoli Onions* was obtained. The soil is a heavy one, and the plants developed slowly and firmly during the growing period. Rats damaged a number of heads in the centre of plot by cutting through the stem and eating the fruit close to the ground, with the result that the heads toppled over and were useless. This pest was effectively dealt with by placing small bits of Rodine paste on the ground in the evening. The paste was not touched by the hand and any unused pieces were gathered up on the following morning. One application was sufficient.

D.

Myosotis White Pearl.

THIS delightful white Forget-me-Not has flowered beautifully during May and is certainly an acquisition to the spring garden. Associated as an edging with Wallflowers it has been most effective, and massed in the half-shady, moist parts of the rock garden it has won many admirers. *White Pearl* is readily raised from seeds, and comes quite true, among several hundreds raised not one varying from the pure pearly white of the original. It was raised and fixed by Mr. E. Bowers, of the Munster Institute, Cork, and was included in the trials of *Myosotis* carried out by the R. H. S. at Wisley in 1917.



Allotments.

POTATO SPRAYING.—Arrangements for the spraying of Potatoes should be taken in hand at once. Many Allotment Associations and District Councils have provided facilities whereby allotment holders may have the plots sprayed at a minimum of expense and trouble. The Belfast Garden Plots Association have generously provided a number of Knapsack sprayers, and these are let out to the local committees, who make their own arrangements for the supply of spraying materials and labour. Some Urban Councils provide spraying machines, material and labour, and then spray the allotments at a fixed charge per plot. Many schemes are in force, and the two suggestions above can be adapted to meet local requirements. Whatever scheme is adopted it is essential that some person with the requisite knowledge of the subject should supervise the preparation of the spraying mixtures, and see that the mixture is properly applied, because notwithstanding the great increase in the acreage of Potatoes sprayed on allotments, very unsatisfactory results have been obtained owing to faulty preparation of the mixture, and insufficient knowledge of the correct methods of spraying. Leaflet No. 11, issued by the Department of Agriculture and Technical Instruction for Ireland, deals with this subject.

CELERY.—It is usual to prepare the trenches for this crop during the winter months, and during the spring and early summer utilising the ridges for early crops of Radish, Lettuce, &c. Many private gardeners take a pride in a properly prepared Celery trench smartly finished off. The trench should be sufficiently wide to take a double row of Celery, and plenty of good manure dug into the bottom of the trench. Allotment holders, as a rule, have not much convenience for raising plants under glass, and the best way is to visit the nursery where celery plants are for sale, see that the plants are properly lifted, and get them planted in the trenches as soon as possible. If the soil is dry and there is no prospect of rain give a heavy watering. Shading is often beneficial for a few days after transplanting. Leafy branches spread over the tops of the trenches will serve the purpose.

TRANSPLANTING.—Many Cauliflower, Broccoli, and other plants are ready to plant out. An old fashioned method is worthy of general adoption. Prepare a small tub or bucket of mud by mixing soil and water and dip the roots in the mixture. Plants of the Cabbage family seldom suffer from transplanting when so treated and do not require watering. Plant as deeply as possible without covering the centre of the plant, making the ground firm.

SEED SOWING.—The last sowing of Peas can now

be made. Lettuce should be sown where it is likely to remain; this crop does better during the summer when not transplanted. Other seeds that can be sown are Beet, especially the Globe variety, Carrots, French and Runner Beans, also Swede and White Turnips. In odd corners Radish, also Mustard and Cress can be sown.

THINNING.—All our seeds, with the exception of Peas, have germinated well and require thinning. This will be done during moist weather if possible. Parsnips, Onions, Carrots and Turnips will require first attention, and then the ground will be deeply hoed between the rows.

PESTS AND DISEASES.—We had a considerable amount of trouble last season owing to the ravages of the Turnip Fly. The perfect insect is easily seen, having two prominent golden stripes on his back or rather wing case, as it is, to be correct, a Beetle. The Beetle is only about one-tenth of an inch long, and plays havoc on the rows of seedling Turnips, devouring the seed leaves. They are especially active in hot, dry weather. We dusted the rows with soot and lime, using two parts of lime to one of soot. On new plots Leather Jackets are often troublesome. Allotment holders do not usually associate Leather Jackets with Daddy Longlegs, but they are one and the same. The grubs feed on the roots of plants. Birds are fond of these grubs, and turning the ground up in the autumn, exposing it to the frost, is useful, as also is lime.

Allotment holders should now examine Celery plants for the Celery Leaf Spot. Dark spots first show on the leaves, which gradually extend until practically the whole plant becomes infected. It would be a useful thing if all Celery plants were sprayed on the plots at the same time as the spraying of Potatoes is carried on, using the same solution. The maggot, which also attacks Celery, can be seen when the leaves are held up to the light. In this case pick off all the affected leaves and burn them.

BROAD BEANS are invariably attacked with Black Fly. When the plants have reached a fair height this does not matter so much; the tops can be broken off and burnt. Occasionally the plants are attacked in the young state, or on plants which have been sown late, before they are very much grown. In such cases paraffin emulsion may be used, or even soap suds from the wash-house.

CARROT AND ONION FLY.—The beds of spring sown plants will benefit if soot is scattered broadcast, especially after thinning. This will help the plants and ward off the fly. The soot sticks better after a shower of rain, or when the dew is on the plants. Should rain occur, however, immediately after the application, the operation should be renewed.

THE FLOWER BORDER.—During this month sow seeds of Wallflowers, Poinsettias, Canterbury Bells, Sweet Rocket and other biennials or perennials desired. Thin out Annuals as soon as they are large enough, giving the plants plenty of room to develop. All the bedding plants, such as Geraniums, should now be in the border. Sweet Peas should not be allowed to tumble by postponing the staking. If so, they seldom recover in a satisfactory manner. Many of the herbaceous plants will also require staking. Place three sticks around a clump, choosing stakes which will be tall and strong enough just to support the plants, and loosely tie with twine as growth proceeds. It adds greatly to the appearance of the flower border when the grass is cut and the edges trimmed.

G. H. O.

The Month's Work.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

PLANTING.—Every endeavour should be made to complete the planting of summer bedding plants, and the filling of vases and window boxes as early in the month as possible. For vases on wind-swept terraces or window boxes in exposed positions it is best to rely on subjects of proved adaptability, and many charming combinations are possible with these. For instance, white Marguerites may be edged with pink or rose-coloured Ivy-leaved Geranium, and the valuable soft yellow *Calceolaria amplexicaulis*, which flowers until late autumn, gives a charming effect if edged with blue trailing Lobelia. In all cases put in plenty of plants, so that the vase or box may quickly become well furnished. Fuchsias, with the exception of the hardy kinds, require a sheltered situation, as they suffer badly if exposed to high winds; and the same applies to Begonias started indoors, which can now be safely planted outside. If dry weather prevails, overhead waterings should be given every evening until the plants are well established, after which the frequent use of the Dutch hoe will do much to promote growth.

STAKING.—Dahlias and herbaceous plants that require staking should be attended to before they are likely to fall down, as when the latter occurs it means double labour afterwards and usually an indifferent result. Stakes should be as unobtrusive as possible, but forethought must, of course, be exercised as to the height and strength of stakes required by the different subjects when fully grown. For Carnations there is nothing to equal the spiral wire stakes sold by most seedsmen, as with these no tying is necessary.

Annuals such as Malope, Clarkia, Cornflower, &c., are best supported by branchy peasticks, which should be inserted amongst them when they are about a foot high. If this is done with careful regard to their height when in flower, the stakes will then be scarcely noticeable.

CLIMBERS.—The young growths of Clematis and many other climbing plants should be attended to at weekly intervals at this season, and until they commence to flower, after which very little further attention is necessary.

THE VEGETABLE GARDEN.

PLANTING.—Tomatoes and Marrows may now be planted out of doors. Tomatoes require a warm, sunny position and good soil, no fresh manure, but a good dusting of bone meal or superphosphate forked into the ground before planting will be of great benefit to them. Liquid manure should not be given until a full crop of fruit has set. When 5 or 6 trusses of fruit have set on a plant it should be stopped at the leaf above the last truss, as that will be quite as many as the plant will have time to perfect in any average Irish summer.

Continue to plant Cauliflowers as the plants become large enough. These require rich soil and plenty of liquid manure during dry weather. The earliest Brussels Sprouts will now be fit to transfer to their permanent position. The ground for these should be firm and not too rich. They should be planted at three feet apart each way.

Celery should be planted as soon as ready. On no account should the plants be allowed to become drawn and crowded before doing so. Plant nine inches apart in well manured trenches, and water copiously after planting. Frequent dustings with soot well watered in afterwards will prevent the leaf mining maggot, besides greatly encouraging the growth of the plants.

SOWING.—Midseason and late Peas may be sown up to the middle of the month. It is a good plan at this season to sow Peas in shallow trenches, at the bottom of which some old hot-bed material has been dug in deeply. Scatter the seeds thinly along the trench and cut down enough soil from the sides to cover them. This system to a great extent prevents drought and consequent mildew, and the trench greatly facilitates watering, should a long spell of hot weather render this necessary.

A sowing of Coleworts may still be made to provide plants for ground cleared of early crops, and a border should also be sown with Short Horn Carrots for using in a young state during autumn and winter. Dwarf Beans, Spinach, Lettuce and Turnips should be sown at intervals of ten days or so to ensure a succession of these vegetables.



AN AMERICAN COWSLIP (page 89).
Dodecatheon integrifolia.

Cucumbers may now be planted in the cold frames from which annuals have been cleared. It is best to plant in a small mound of good soil, just enough to plant in, consisting of three parts good loam to one part of manure, with a sprinkling of bone meal. Afford air to the frames with care, and close early in the afternoon after syringing the plants and surroundings. When five or six leaves have been formed take out the point of the shoot, to encourage the production of fruiting lateral growths, which should be stopped at one leaf beyond the fruit. When roots appear on the surface of the soil give a topdressing of similar compost. This will require doing every week, and it is well to thoroughly soak the plants with water before applying the soil.

THE FRUIT GARDEN.

Melons may be grown in cold frames in much the same manner as that just described for Cucumbers, except that no manure except bone meal should be given until a crop of fruit has been set. When this has been secured a rich topdressing may be applied, and plenty of water afforded until the fruits approach maturity, when drier conditions must prevail to encourage the ripening process.

WALL TREES.—Tie in the leading shoots on young Plum trees now and stop all other growths at the fourth leaf. Older trees that have covered their allotted space should have their shoots stopped in the same way, doing the top half of the tree first, and letting a week elapse before the growths on the lower half are pinched. In this way the balance of vigour will be maintained, and any check in the flow of sap to the fruits will be avoided. If heavy crops have set, a little thinning may be done at this stage, but do not remove too many, because some always drop during the stoning period, and the same applies to the fruits of Apricots and Peaches. Wall trees bearing good crops require frequent and copious waterings with well diluted liquid manure, afterwards mulching them with strawy manure or short grass from the lawns. Strawberries should be netted before they commence to colour. The nets are best hung on wires supported by poles five feet high. A roll of three feet wire netting should be placed around the bed next the ground and nailed to the posts, and the Strawberry net fastened to the top of the wire netting. This method preserves the net from rotting on the ground, besides enabling the fruit to be picked in comfort.

Midland and Northern Counties.

By W. ROBERTS, Gardener to Lady Emily Bury Charleville Forest, Tullamore, King's County.

KITCHEN GARDEN.

Do not cut Asparagus too late. Give manure water if possible, and a dressing of salt will be very beneficial. A few Peas and Beans may still be sown for late crops. The early varieties of round-seeded Peas generally give the best results from these late sowings. Continue to plant out Broccoli, Cauliflower, &c., and give water plentifully until started into growth. Transplant main

crop Celery with unusual care; sow Chicory and plant out Lettuce; also make another small sowing of the latter. Attend to the thinning of all crops, such as Onions, Parsley, Turnips, &c., choosing showery weather for the operation. Ridge Cucumbers may be put out where required for pickling. Earth up main crop Potatoes, and where spraying is adopted have everything in readiness. Sow Endive and full crop Turnips, and keep the hoe going on all and every occasion amongst growing crops with a view to keeping clean and preventing too much evaporation during dry and hot weather. This is a good time to prepare Mushroom beds where these are appreciated; they can be made either inside or out with equal success providing the correct material is obtainable—viz., good sweet horse manure, failing which my experience is that you are only courting failure.

FLOWER GARDEN.

Complete all bedding out as soon as possible so as to obtain the maximum amount of flower as early as possible. Thin all annuals sown outdoors, and sow the various biennials and perennials for transplanting in autumn, and there is still time to sow *Calceolaria*, *Cineraria*, *Primula*, &c., where not already sown. Put *Chrysanthemums* into flowering pots, and attend to the staking of anything requiring same in time, as it entails double labour if things are allowed to fall over.

FRUIT GARDEN AND HOUSES.

A sharp look out will have to be kept for pests of all sorts on wall trees such as Plums, Pears, &c., and either pick off and destroy, as in the case of the various caterpillars, or wash with some safe insecticide in the case of aphids, &c. Also pay attention to thinning the fruits; this is an operation that pays from every point of view, and should be carried out wherever possible. Keep the soil stirred about the roots of all wall fruits, and water if required, and mulch with any sort of old hotbed material, leaf soil; short grass from lawns will greatly assist. Strawberries, which seem to me to be considerably later than last year, will require to have nets ready for protection against birds, as they generally attack the early fruits most, especially if the weather is dry and hot. Where a conveniently sized plot is kept for dessert purposes it is a good plan to raise the net on wires or strings so as to enable one to gather in comfort, but for general purposes I find it suffices to stretch the nets along or across the rows, the foliage being sufficient to keep the nets clear of the fruit. Anywhere that forcing is still carried on, the end of the month is a good time to layer the early batch of runners, and it always pays to select the best runners, it being a waste of time to take them haphazardly when layering for this purpose. Work in the vineries and peach-houses will consist of stopping, tying, thinning, syringing and damping, as well as watering. Vines in the early houses showing colour will require a constant circulation of air. Some growers recommended a little left on at night, but I would only advise this where artificial heat is employed, at least for the present month. Those already thinned and swelling will be benefited by an application of some reliable artificial or weak liquid manure, and a good dressing of lime watered in is of great help at this period.

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Irish Gardening

Contents

	PAGE		PAGE
Rhododendrons at Rowallane in May	97	The Rose Garden	105
Hardy Calceolarias	99	The Flowering of Fruit Trees (Illustrated)	105
At Powerscourt	99	Viburnums (Illustrated)	106
In the North	100	Royal Agricultural Society of England	108
Primula deorum	102	Summer Pruning Deciduous Trees .	109
Rhododendron Loderi—Pretty Polly (Illustrated)	102	The Apple Crop	109
London Pride—Saxifraga umbrosa .	102	Allotments	110
Dianthus	102	The Month's Work—	
Notes from my Rock Garden . . .	103	Southern and Western Counties	111
The Æthianemas (Illustrated) . . .	104	Midland and Northern Counties	112
Gardeners and Foresters under the Department of Agriculture . . .	104		



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IRISH GARDENING

VOLUME XIV
No. 161

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

JULY
1919

EDITOR J. W. BESANT

Rhododendrons at Rowallane in May.

By H. ARMYTAGE MOORE.

WHERE a representative collection of Rhododendrons is grown the number of May-flowering plants, both species and hybrids, is so extensive that only a selection from them can be referred to within the limits of an article such as this.

Amongst species, a first-rank position must

gardens. Apart from the extreme brilliancy of the flowers, its good, compact habit, and apparent hardiness, the plant possesses the further conspicuous merit of starting late into growth, and thus escaping the terrors of spring frosts.



RHODODENDRON LODERI, VAR. PRETTY POLLY,
Royal Botanic Gardens, Glasnevin.

Photo by]

[W. E. Trevellick.

be assigned to *Rh. neriflorum* (mentioned in my previous notes under No. 8939 of Forrest), whose season of flowers extends well into May, though brilliant blooms were noticeable from mid-April onwards. I need add little to the description of this plant that I have previously ventured to give in the pages of IRISH GARDENING, except to say that in *Rh. neriflorum* we have a plant which cannot fail to excite enthusiasm, and one which seems destined to take a proud place in all good Rhododendron

In *Rh. callimorphum* we have another outstanding plant which has attracted much attention here this season. Of neat, compact habit, the leaves are rounded at the apex, and blue-white beneath, as in *Rh. Thomsonii*. The flowers are borne in a loose yet shapely truss, the bursting bud being of a brilliant cherry-red, fading off as the blooms expand to a delicate salmon-pink, faintly tinged with lilac, beautifully marked, with a striking crimson blotch at the base of the bell-shaped corolla. The effect

of a group of plants in full flower at the base of a bold rock has been very effective here during the past month.

Rh. Baileyi may fairly be described as both interesting and attractive. Hailing from the Brahmaputra River, at the Thibet-Burmese bend—a district probably not collected from before—this species was introduced by, and has been named after, its discoverer, Col. Bailey. It belongs to the lepidotum series, but is distinguished by its larger leaves and conspicuous racemose truss of petunia-coloured, saucer-shaped flowers. The upper surface of the leaf is of a pleasing grey-green, and the under surface orange-brown. The whole plant, when well-flowered, presents a delicate, graceful appearance, and at once fills the eye as something both distinct and striking. Amongst a batch of *Rh. Baileyi* seedlings, we find a number of diminutive plants of dainty appearance, and more sparsely flowered than the type, which Professor Balfour informs me may prove to be a distinct species, *Rh. thyodocum*, which is known to inhabit a neighbouring station in Bhutan.

Rh. zaleucum flowered here for the first time this season, and has certainly not done itself justice as yet. The flower is not unlike that of *Rh. arectrephe*s, ranging in colour from white to pink and shades of lilac. The young foliage is almost worthy to rank with *Andromeda japonica* for effect of colour, and, in addition, the underside of the leaf is of a beautiful blue-white. This, indeed, ought to prove a valuable shrub for the rock-garden.

The true *Rh. charianthum* is a delightful free-flowering plant of the yunnanense type, whose colour may be described as a blending of mauve and pink. Likewise, *Rh. Davidsonianum*, with rather more pink than mauve, a profuse bloomer and good grower. Both of these are variable species, with many intermediate forms, but they are all characterised by extreme freedom of flower, delicate shades of colour, and good, upright habit. In this category *Rh. Augustinii* should also be placed, the blue-lilac colouring in some specimens being quite remarkable, though, perhaps, to some eyes the paler shades may well prove more attractive.

Rh. guthinum, pale purple, and *Rh. charitophyllum*, nearly white, are both decorative subjects, which mature their growth rapidly after flowering, and some develop into shapely six-foot bushes. *Rh. villosum*, bristling with hairs, alike on leaf and stem, produces blooms of varying shades of reddish purple, some of which are certainly striking, if not particularly attractive. A bed of *Rh. arectrephe*s was remarkable for a multitude of flowers, practically

hiding every leaf, the colour varying from white to pink and mauve. *Rh. decorum* has developed five trusses of bloom, and the delicate fragrance of the pure white blossoms no less than their size and substance make this a plant of high garden value, and one, moreover, which is calculated to develop into a conspicuous specimen.

Against a north wall, both *Rh. Edgeworthii* and *Rh. sesterianum* have flowered attractively, the latter in particular with twenty-nine fully expanded blooms, providing a beautiful object to look upon, and shedding a delicious fragrance. Under a cool rock *Rh. assamicum* opened several white funnel-shaped flowers, somewhat resembling a white *Lapageria*. The foliage is neat, and distinctly aromatic.

Rh. Kamtschaticum, proverbially parsimonious of bloom, opened a few isolated flowers, and is developing into an attractive mat of green. There is really less virtue in the cultivation of this species than is commonly supposed, and perhaps if people would cease to irritate the plant with Sphagnum Moss and panes of glass, and content themselves with setting it firmly into sandy peat on the north side of a big stone, a happier future might be in store for what is really quite a sociable little subject.

I should be glad to be able to say as much for *Rh. Chamacisus*, but as we are beyond his season we can disregard his sulking habits for the present.

A ten-year-old plant of *Rh. Griffithianum*, raised here from Indian seed, has borne its first flowers, of unexpected whiteness, on a stalk of pale green, the whole truss without a single tinge of pink, and apparently distinct from the typical plant, both in colour and in the more bell-shaped formation of the flower.

Rh. Fascyi, with beautiful clusters of shell-pink blooms, provides a charming subject for the rock-garden in early May. This is surely a plant which richly deserves more extended cultivation than it hitherto appears to have met with. *Rh. indicum* and its various forms provide admirable decoration, and are well worthy of such shelter as they usually appear to require.

As regards May-flowering hybrids, a very extensive list might easily be compiled, but the following selection can be confidently recommended for general cultivation:—*Pink Pearl*, *White Gem*, *Loder's White*, *Duchess of Portland*, *Mrs. E. C. Stirling*, *Cynthia*, *Prometheus*, *Bagshot Ruby*, *Doncaster*, *Lady Decies*, *Corona*, *J. G. Millais*, *Gauntlettii*, *John Waterer*, *Fred. Waterer*, *Lady Grey Egerton*, *Alice*, *Strategist*, *Erechestianum*, *Pastuosum* fl. pl., *Mrs. W. Agnew*.

10th June, 1919.

Hardy Calceolarias.

The gorgeous Calceolarias of the greenhouse are objects of much admiration, and never fail to attract visitors at flower shows and in public gardens.

To the lover of the outdoor garden, and especially to one who is interested in rock gardening, it is satisfactory to know that several species and at least one hybrid may be grown in the open.

There are two sections—viz., herbaceous species and shrubby species, looked at from a gardening point of view.

To the first section belongs *C. plantaginea*, a low growing plant spreading by means of short side growths; the leaves, formed in rosettes, are broadly ovate with toothed margins and attain a considerable size in moist positions. The flowers, produced on slender stems, nine inches to a foot high, are a fine bright yellow, a good plant making a fine show.

C. polyrhiza increases rapidly by means of wide-spreading rhizomes, and quickly finds its way into conditions which suit it. At Glasnevin, where it was originally planted in a small bog, it spread up a bank on one side and established itself among the roots of ferns growing there; it appears to like rather drier conditions than *C. plantaginea*. The leaves are long and narrowed into a petiole and are softly hairy on both surfaces. The flowers, produced singly on slender stems, have a rounded "pouch" yellow with numerous reddish brown spots underneath.

Calceolaria John Innes is a remarkably fine plant raised at the John Innes Horticultural Institute, Surrey. It is the result of crossing the two species previously mentioned, and combines the good qualities of both parents. In habit it closely resembles *C. plantaginea*, forming a comparatively compact mass increasing by short side growths; the leaves are intermediate, narrower than those of *C. plantaginea*, but not showing the distinct petiole of *C. polyrhiza*. The flowers, produced in pairs, are carried on wiry stems nine inches to a foot in height; they are longer than either of the parents, the pouch widening as it expands, becoming somewhat wedge-shaped. The colour is bright yellow, with a few brown spots on the underside of the pouch.

SHRUBBY SPECIES.

Of these there is a considerable number, but only a very few can be grown outside, and these only in the milder parts of the country, or in very sheltered positions.

C. alba is one of the most attractive, with narrow dark green leaves, slightly toothed.

The flowers, produced in branched racemes, are small and pure white. The whole plant is somewhat viscid or clammy. This makes an interesting wall plant, and is worth persevering with where good plants are appreciated.

C. integrifolia is fairly hardy in mild localities or with shelter. The leaves are oval, tapering to a blunt point, dark green above, grey below with prominent veins. The flowers, produced in clusters on long stems, are bright yellow, and make a good display from July onwards.

C. Sinclairi is an attractive plant where it succeeds, but cannot be reckoned as hardy, though it lives in a cold frame, and is frequently subjected to frost. Where it can be kept fairly dry in winter it seems to survive all right, and a position should be selected accordingly when planting in the open. The base of a wall, or a sheltered dry position in the rock garden, where water could be applied in summer, would seem to offer the greatest hopes of success. *C. Sinclairi* forms a low-spreading bush, the leaves, green above and whitish below, are distinctly stalked, the stalk and midrib of the leaf being tinged with a dull reddish brown colour. The flowers are white, with reddish purple spots.

C. violacea is certainly one of the hardiest, and survives in a variety of positions, but requires protection from cold winds. The leaves are oval lanceolate and stalked, while the light violet-coloured flowers are marked with darker spots below. Given shelter in winter and an adequate supply of moisture in summer, *C. violacea* is a most attractive and distinct plant worthy of a place among choice things.

X., DUBLIN.

At Powerscourt

With the Dublin Microscopic Club.

On Saturday, the 28th June, the Dublin Microscopic Club held its annual outing in the magnificent gardens and grounds of Powerscourt.

Lord Powerscourt gave the members a hearty welcome, and accorded them permission to go where they liked and examine everything of interest.

The magnificent specimens of *Pinus radiata* (insignis) flanking the approach to the entrance gate gave the key to the whole place. These noble specimens, splendidly branched and of great height and girth, are among the finest to be seen anywhere. Just inside the entrance are many fine old Beeches, with clean, straight boles such as delight the forester's eye.

In the grounds surrounding the mansion, and surrounded by hills, the collection of trees,

particularly Conifers, is remarkable, and the individual specimens are such as are rarely met with.

Noble examples of the Sitka spruce, *Picea sitchensis*, were a feature of great interest, considering the value of this tree for forestry purposes.

Other *Piceas* of great interest and beauty at Powerscourt are *P. polita*, *P. morinda*, and *P. hondensis*.

The silver firs are represented by fine specimens of *Abies grandis*, *A. nobilis*, *A. nordmanniana* and *A. pectinata*. Of Pines, *P. excelsa*, *P. ponderosa*, and *P. cembra* were noted as very large trees. Remarkable specimens of *Sequoia gigantea*, rising like tall spires, are a notable feature, while the Cedars are represented by *Cedrus Deodara* and *Cedrus atlantica glauca*, both fine specimens.

A collection of young Larches planted on a sloping bank was examined with much interest. Among others were noted, *Larix europæa*, *L. leptolepis*, *L. montana*, *L. Kurillensis*, *L. occidentalis*, &c., are all doing well.

It was only possible to take a passing glance at the fine plantations of Douglas Fir, *Pseudotsuga Douglasii*, planted closely on strictly forestry lines, but the fine healthy appearance and good growth of the trees were favourably commented on. Other interesting Conifers seen were fine specimens of *Cupressus obtusa aurea*, and *C. pisifera squarrosa*, both so desirable as ornamental trees in parks and gardens. *Fitzroya patagonica* was much admired, this uncommon Patagonian and Chilean tree being rarely seen in such fine condition.

Of hardwoods there are fine examples of Sycamore and Beech, and the other commoner trees of our woods and parks.

Nothofagus betuloides near the lake is probably one of the finest specimens in the country, and was examined with much interest by the members of the party. It is one of the evergreen Beeches of South America, bearing closely placed ovate, toothed leaves dotted with glands on the lower surface. The handsome and distinct appearance of this tree was much admired.

In the gardens proper the abundant fruit crop was noticed, together with the well-managed appearance of the vegetable quarters and flower borders.

Mr. Lee, head gardener, is a well-known competitor at our Dublin shows, and his Sweet Peas are marvels of skilful cultivation.

In the gardens the party was again met by Lord Powerscourt, who very kindly conducted the members through the mansion house. The magnificent rooms and halls were a source of wonder and admiration, while intense interest was added to the tour by the presence

of Lord Powerscourt, who kindly explained the history and origin of the beautiful paintings, wonderful ceilings, and other objects of art contained therein, many of them brought from far countries by Lord Powerscourt's ancestors. Not the least interesting was an immense array of war trophies collected by Lord Powerscourt on the battlefields of France and the Dardanelles during the late war when serving with his regiment. At the conclusion of this delightful tour the members were kindly entertained to a bountiful tea on the terrace, to which they were ready to do ample justice.

The return to Dublin was accomplished without incident, and it was the unanimous opinion of all present that the outing had been one of the most enjoyable in the annals of the Club.

VISITOR.

In the North.

To the gardener whose time is mostly spent in the Dublin district a visit to the north is always a pleasure and an inspiration. The gardeners of the north, whether professionals or owners, are enthusiasts, and, moreover, appear to enjoy a visit from anyone interested in plants and gardens.

In the first week of June a garden still retains much of its vernal fairness—in the north there was no lack of beauty and interest.

The first garden visited was at The Bush, near Antrim, the home, as many of our readers know, of Mr. H. D. M. Barton, and the rock garden is something to remember. The following plants were noted at random as we wandered through the glades and valleys of the rockery, which covers at present just about one acre:—

P. Wardii.—The Bush variety is a handsome and striking plant, quite 2 feet high, bearing handsome umbels of sweet-scented flowers, a shade paler than the type, but the flower stems are much taller. *Cypripedium macranthon*, with its dark rose-coloured "pouches," was doing well on a moist, shady bank, in company with *C. calceolus*.

Crabaria grandiflora, with pendulous yellow flowers, flourishes near by. *Silene Asterias*, though not uncommon, was very vigorous and striking, with its heads of dark red flowers; and not far away the dwarf *Rhododendron Kamtschaticum*, about 1 inches high, but a foot across, was carrying several rosy-red, wide-open flowers. This tiny species evidently enjoys a cool, moist soil, and spreads by means of underground runners. Mr. Barton believes that *Rh. Kamtschaticum* should be planted in a cool, shady position in suitable soil, and left alone. On the opposite side of this little ravine, and exposed to the sun, *Lewisia Howelli* flourishes

on a sunny bank, and several plants were carrying up to five umbels of their characteristic pink flowers.

High upon another bank the brilliant *Habranthus pratensis* was a perfect blaze of orange red, the flower spikes so numerous as to almost hide the leaves. No coddling is given here, but soil well drained and free exposure to sun and air. Near by *Pentstemon Davidsoni*, a fine mass, was smothered with flowers, a sight to fill one with envy and admiration.

Veronica pyrolaformis.—An uncommon Speedwell from China was noted at the same time, and a wide, spreading mass of the handsome *Dianthus superbus*, with fringed pink flowers. *Allosurus crispus*, the Parsley Fern, collected in the Lead Hills of Lanarkshire, gave tufts of bright green, most refreshing to the eye. Terminating a sloping bank, a huge bush of *Rosa Moyesii* was just coming into flower, showing many buds and a few open flowers of rich crimson. Fine masses of a hybrid Wall-flower, known as Miss King's variety, gave a rich orange tone. *Lithospermum prostratum*, literally in square yards, gave that wonderful blue effect only equalled by some Gentians. Far-spreading colonies of vigorous Primulas, for which The Bush is famous, met the eye on every side. In addition to *P. Wardii*, *P. pulverulenta* was there in hundreds, also marvelously beautiful hybrids of *P. bulleyana* X, *P. cockburniana*, which crop up spontaneously, and establish themselves by little rivulets in boggy places, lighting the whole garden with their colour. A remarkable and most attractive group was that of *Camassia Cusicki*, with fine spikes of dark blue flowers; a moist, boggy position seems to suit it well. *Mimulus radicans* was covering quite a large area, and beginning to open its quaint flowers. Perhaps the most interesting discovery at The Bush was *Primula Knuthiana*, growing in rather hard, dry soil at the base of a tree, and throwing out stolons which run along just under the surface of the soil, and at some inches from the parent plant form new plants. This species has baffled more than one grower, but Mr. Barton, who takes a special interest in Primulas, seems to have discovered the secret. In the more formal garden many beds are filled with *Violas*, which are favourites at The Bush, and herbaceous borders were gay with *Poppies*, *Lupins*, *Irises* and other June-flowering herbaceous plants.

Hardy fruit-growing is carried on extensively by Mr. Barton, and many acres are covered by Gooseberries and Black Currants, carrying heavy crops: there is also an orchard of nine acres, chiefly planted with Bramleys.

The Donard Nurseries.

Our next visit was to the Donard Nurseries at Newcastle, Co. Down, where we were most generously entertained by the proprietor, Mr. James Coey, an enthusiastic plantsman.

Here we soon noted a bed of *Primula japonica atrosanguinea*, with handsome dark blood-red flowers. The yellow fruited form of *Cotoneaster frigida* was pointed out, though, of course, not in fruit. *Potentilla Veitchii* was seen flowering in abundance—a plant that should be in every garden where shrubs are grown.

Pyrus erythrocarpa, a form of *P. arbutifolia*, was noted flowering freely. This *Pyrus* forms a bush 6 feet or more in height, and is valuable on account of the brilliant colour assumed by the leaves in autumn; then, too, the fruits become red, and form an additional attraction.

A rapid growing form of *Castanopsis chrysophylla* was pointed out. It is an interesting plant, as there is said to be two forms, one growing faster than the other.

Viburnum phlebotrachum, a Japanese plant, forms a nice bush, and is useful for fruiting in autumn.

Kalmia flourish in the non-calcareous soil of Newcastle, and we noted thriving bushes of *K. angustifolium*. A semi-double rich yellow rose species, of Chinese origin, was one of the finest things noted. With something of the habit of *Rosa Hugonis*, it is, however, more vigorous and of a richer colour, the two growing side by side in the nursery.

*Leptospermum*s are a feature at Donard Nurseries, and fine exhibits have appeared at the leading shows throughout the three kingdoms. There is a remarkably fine stock of the various red and pink-flowered forms, as well as some "breaks" in habit, which may lead to the further use of this interesting and pretty genus of New Zealand shrubs.

Lomatia ferruginea (L. pinnatifolia) is represented by a fine stock of healthy young plants, hardily grown in the open, and should be very suitable for those who may wish to try this striking Chilean shrub.

Eucyphia cordifolia was similarly noted, and *Rhododendron nepalense* was said to be the best red-flowered form of the Arboreum set.

An uncommon shrub is *Sphacele campanulata*, here represented by numerous bushes, covered with bright blue flowers. Although not to be recommended as generally hardy, this labiate is a pretty plant for a sheltered nook, where it could be protected in severe weather.

A plant called *Olcaria gummifera* had all the appearance of being a form of *O. stellulata*, and is probably the plant sometimes known as *O.*

stellulata macrocephala: of looser habit than the type, and with larger and more spreading flower corymbs.

Styrax japonicum was noted, and is a desirable small tree, bearing in its season pendulous white flowers of considerable beauty. *Juniperus communis aurea* is an attractive low-growing golden variety, suitable for the rock garden. We noticed, too, a pale pink Broom, said to be the result of crossing *Cytisus Dallmayeri* with another species. A remarkable dark, purplish red-flowered *Buddleia* of the *B. Colvillei* type was noted, and near by, on a wall, a most floriferous plant of *Fremontia Californica*, which apparently enjoys full sun, with its roots in a hard gravel path.

In the frames are stocks of many fine things in pots, including Alpines, among them being several of Mr. Groves' hybrid *Campanulas*. Altogether, we felt that the Donard Nurseries are destined to add to the fame already enjoyed by Irish commercial gardens.

(To be continued.)

Primula deorum.

THE original plant of *Primula deorum*, photographed when in flower by the late Mr. Ball, is still alive at Mucklagh, but owing to overcrowding by other things, is not flowering this year. A much larger patch subsequently imported has increased, and is now in flower. I attribute the flourishing condition of *P. deorum* at Mucklagh entirely to my having imitated as far as possible the conditions surrounding it in its native habitat. In the Balkans it grows at from 8,000 feet to 9,000 feet above sea level, and invariably in very moist situations—that is, situations moist with running water both winter and summer. *I have never found it in a limestone district nor in a spot where the water was stagnant.* I have always found it in open spots, fully exposed to the sun. The best flowering spikes I ever saw were in a clump that had grown right across a mountain rill, and through the roots of which the water had to flow. O'MAHONY, Mucklagh.

May 26, 1919.

Rhododendron Loderi—Pretty Polly.

THIS magnificent hybrid is one of a series raised by Sir Edmund Loder at Leonardslee, in Surrey. It originated from crossing *Rhododendron Fortunei* with *Rhododendron Griffithianum*. *Rh. Loderi* itself is practically pure white when expanded, but some of the seed-

lings showed certain variations in colour, and were given distinctive names, and one or two have received the Award of Merit of the Royal Horticultural Society. The subject of our note flowered finely in the Royal Botanic Gardens at Glasnevin this spring, and was a source of the greatest admiration. The immense flowers, six inches in diameter, and as many as ten in a truss, are a lovely pale pink in colour, the effect of a well-flowered plant being truly remarkable. The large, handsome leaves are themselves conspicuous, and would give the plant high rank as an evergreen, even without flowers. Growth does not begin too early, hence there is seldom danger from frost.

Other colour varieties are *Patience*, pure white, with green inside the tube. An equally fine form, which flowered in the National Collection at Glasnevin last year—*Pink Diamond*, a good pink; *Diamond*, pure white; *Queen Mary*, pink; and *Sir Joseph Hooker*, white.

London Pride—Saxifraga umbrosa.

ALTHOUGH a common enough plant in most gardens, it is usually relegated to a sunless corner as being "useful for growing in the shade." But what a very different plant it appears when given a fair chance, a chance to throw up its graceful spikes of small daintily marked pink flowers, which it does freely, and which seem so well suited to the glossy dark foliage. As a cut flower for house work it makes a light and elegant decoration, blending in with many of the early spring flowers. As to its hardiness, it seldom fails where ever it is asked to grow, and can be transplanted with little danger at almost any time of the year, provided water is supplied after moving. If all plants were as easily satisfied and gave such satisfactory results, a gardener's motto would not need to be "patience."

R. M. P.

Dianthus.

MANY notes and articles in praise of the varieties of *Dianthus* have appeared from time to time in the pages of IRISH GARDENING, but being so popular, and many of them so easily propagated, a few more notes may be acceptable. They are such truly "summer" flowers, their deliciously sweet scent, which they all appear to have, their clear colours, although not always brilliant, and, above all, their love for the sunshine gives them a standing in all gardens. The small double white of early June, *Mrs. Sinkins*, a large well-known double white, *Mer Majesty*, very like *Mrs. Sinkins*, but later, are old

favourites, easy to propagate, and always welcome. And as well as these there are charming little species in all shades, shapes and sizes, suitable for borders, rock gardens, or beds.

Dianthus fragrans, white with fragrant fringed flowers. *D. monspessulanus*, single pink flower, also fringed. *D. plumarius*, if grown from seed, will give an endless range of colours. *D. alpinus*, bright pink, with large flowers on very short stems, and *D. subcaulis*, which forms a regular cushion of green, from which come small pinky flowers.

These are but a few of the many treasures in this genus. R. M. P.

Notes from my Rock Garden.

By AMARANTHE.

EACH of these summer days adds a fresh beauty to my rock-garden; for some months past it has been lovely and interesting—the latter it always is to me.

On last New Year's Day, amidst falling rain but with high hopes, I planted a great many new treasures—little, tufty, interesting-looking plants, neatly packed, and labelled in the expert's manner, that had arrived by post that day, and now they are making their *debut* in my rock-garden with great beauty and grace, and gaining much admiration.

This most fascinating style of gardening is growing in popularity every day, and is less arduous than many other forms of gardening. The little children of the hills reward us hugely for any care and consideration that we may bestow upon their requirements, and a knowledge of their habit of growth will enable us to grow plants that might be thought impossible. Owing to the structural arrangement of the rocks and stones, less than "half the proper gardener's work is done upon his knees," while weeds do not torment, as in beds and borders; so that "the cast-iron back with a hinge in it," longed for by gardeners, can be almost dispensed with.

New plants and old favourites make a wonderful wealth of beauty just now. Asthore, the exquisite, sweetly-scented, new salmon-pink *Primula*, with faintly lilac-tinted edge, stands out beautifully from the cool, grey stones. The prostrate sprays of *Æthionema persicum*, fair in form and colour, neither pink lilac nor white, intermingle with the *Primula*, and gather round its feet. From the same group, and of very suitable company, blooms the blush *Primula japonica*. Changing to white, with large, orange eye, the lovely blue

P. capitata, silvery and powdery, by favour of these hot days, is hastening to don its gala attire, and join the party. At a safe distance a large colony of fiery Scarlet Lissadell Hybrid *Primula* blazes away; much stone-work and plants judiciously intervene between it and the clumps of demure-looking *P. sikkimensis*. One of the same family, but not easily recognised as such by the uninitiated, its drooping, canary-coloured scented and powdered bells are very beautiful, and it is a popular *Primula* at present.

The varieties of beautiful, hardy *Primulas*, powdered and unpowdered, are legion, but almost all are very desirable to grow. *Sikkimensis* is very happily placed with me near a natural spring, which gives the dampness it loves, while the suitable company above it includes Columbine *Helenæ* and *Gentians*; and still higher the *Aubrietia*-named Lavender, combined with the silvery-marbled *Cyclamen* leaves. The white and pink varieties of this latter plant are lovely in autumn; while the foliage, like that of the many-silvery *Artemesias*, is a great asset.

Yet one more *Primula* I must not ignore—the opal-tinted, pure, and dignified *P. involucreata*, now at its best, amidst a mass of Turquoise *Omphalodes Cappadocica*, the younger and more beautiful sister of our dear old favourite, Blue-Eyed Mary; but this group is waning.

The last few days have brought out many beautiful rock *Violas*. The indispensable *V. gracilis*, Bowle's tiny, velvety Black, Gold Dust, *Bosniaca*, all very choice, and easily grown, the latter an unusual lovely rose shade. Amongst these treasures the dazzling beauty of *Arenaria montana* shines out conspicuously—from its slender root-stems sheets of glistening drapery hang down.

The glowing, bazy heat of the days begins to give place to a fainter bluey haze; some of the flowers grow weary; a mass of *Anthemis Cupaniana* folds back its snowy petals towards the silvery-scented leaves in a way peculiarly its own; each blossom of the tiny gem *Helichrysum bellidioides* shuts up tightly for the night; I gather up my belongings, and leave the sweet flowers to go asleep.

Notice.

THE ENGLISH ROCK GARDEN.

MR. REGINALD FARRER'S extensive work on the Rock Garden is now completed, and Messrs. Jack will publish it immediately. It is in two volumes and contains 200 illustrations.

We hope to have the opportunity of referring more fully to this sumptuous work very soon.



ÆTHIONEMAS IN THE ROCK GARDEN AT GLASNEVIN.

The Æthionemas.

WHEN happily placed there are few more charming and satisfactory alpine than the various species of Æthionema. Annually they flower with the greatest freedom, and, with few exceptions, seem perfectly hardy if given the right conditions.

They must have perfect drainage and a free exposure. Poor, stony soil suits them better than a richer medium, causing a harder growth; in fact, most of them under such conditions become woody at the base, the woody portion slowly increasing each year. Thus they will come through the hardest winter. The position should also be sharply sloping; even an old wall is preferable to a flat pocket in districts notoriously wet in winter.

Seeds are nearly always procurable, and it is advisable after flowering to leave sufficient to ensure a supply, otherwise most of the roots should be cut back just behind the flower spike.

Perhaps the two most popular species are *Æthionema grandiflora* and *A. pulchellum*, the former bearing long racemes of rosy pink flowers and the latter pale pink blossoms of much beauty; both have pretty glaucous leaves.

A. amurense, which has lately become fairly common in gardens, may be described as a larger edition of *A. pulchellum*, having larger flowers of soft pale pink carried on rather stouter shoots.

A. cordatum is unique in its sulphur yellow flowers, and is worthy of inclusion among choice rock plants. It repays some attention in cultivation, for it is inclined to be of somewhat leggy growth if left to itself. Immediately after flowering the growths should be well shortened back, leaving only sufficient to obtain seeds; so treated it will remain stocky for years and flower freely. Seedlings of this species should be pinched once or twice in spring and early summer to make bushy young plants. A group of *A. cordatum* several feet square never fails to win admiration when in full flower.

A. gracile is a slender growing little plant with something of the habit of *A. pulchellum*, but less vigorous, and with heads of deep pink flowers; it grows quite well, however, in a sunny position in gritty soil.

An old favourite is *A. iberideum*, forming a dense mass of twiggly shoots clothed with small glaucous leaves, and bearing heads of pure white flowers. *A. persicum* forms neat bushes of wiry stems, bearing glaucous leaves and terminated by rosy lilac flowers. *A. schistosum* is a somewhat spreading grower, the twiggly stems lying flatter than most, but it is effective when bearing its pink blossoms. Here it is perhaps the least satisfactory in behaviour, odd branches, and sometimes whole plants dying off unaccountably in the middle of summer. *A. oppositifolia* forms a close little tuft of shoots and leaves quite unlike the other species. It bears a few white flowers, but is more of botanical than horticultural interest.

DUBLIN BAY.

Gardeners and Foresters under the Department of Agriculture.

ATTENTION is directed to the announcement in our advertising columns relative to courses of training in horticulture and forestry to be held during the year 1919-20 under the Department of Agriculture.

The Horticultural School attached to the Albert Agricultural College, Glasnevin, Dublin, will be open to two classes of resident students, viz.:— (1) Horticultural Instructors in Training, and (2) Apprentices. No applicant will be eligible for admission to the first mentioned course who has not had from five to seven years' continuous experience of gardening. Applicants for admission as apprentices will not be required to have had any special experience of this nature.

Students admitted as Horticultural Instructors in Training will receive an allowance of 10s. per week, and be provided with board and residence at the College. Apprentices will be provided with board and residence at the College, and will, after some months' training, be eligible to receive in addition an allowance of 5s. per week.

The course for Horticultural Instructors in Training will provide facilities for the study of the sciences bearing on horticulture. Indoor instruction will be supplemented by work in garden and orchard, special attention being devoted to fruits, vegetables, plant diseases and insect pests. In the case of the apprentices, outdoor instruction will be supplemented by special classes designed to enable an apprentice to understand the principles underlying horticultural practice.

Arrangements have also been made for a course of instruction for non-resident pupils, open to both male and female students. These students will be required to take part for seven or eight hours daily in all the operations carried out in the College gardens. They will, in addition, receive class-room instruction in the sciences bearing on gardening operations. No remuneration will be allowed in the case of these extern students. The instruction will be provided free.

Applicants for apprenticeships in forestry are not expected to have had any special knowledge of forestry, but preference is given to those who have had experience of work in woods. Apprentices will be allowed the minimum rate of Wages fixed by the Agricultural Wages Board for Ireland in the case of agricultural workmen in the district in which the apprentice is working.

The Department also offer valuable scholarships in horticulture and forestry tenable at the Royal College of Science, Dublin. The scholarships are renewable for a total course of four years, and enable the holders to obtain, free of cost, the most advanced technical and scientific training.

The Rose Garden.

CONSIDERABLE progress has been made in June, though even now, past the middle of the month, good flowers are by no means plentiful.

Some of the free-growing singles are conspicuous, particularly the Penzance Briars. These are scarcely roses for the small garden, as they must be allowed to develop freely to get the maximum effect. All the pruning they require as a rule is a thinning-out after flowering. Very striking is *Lucy Bertram*, one of the best of the set, with large flowers of a clear, rich, rose colour; others are the vigorous *Anne of Geirstein*, crimson; *Flora McIvor*, white tinted rose; *Lady Penzance*, copper, shaded rose; *Lord Penzance*, fawn and yellow; *Meg. Merlees*, rosy crimson. Perhaps *Rosa Moyesii*, now in full beauty, is finer in colour and better in habit than the Briars, but for vigour and sweetness it will be long ere the latter are out-classed.

Among climbers but few are yet producing flowers, though the large semi-double *Una*, with palest yellow flowers, which, when fully open, are almost white, has been adorning the arches for some days. On a wall *Rosa laevigata* has opened its large, pure white single flowers, and if less attractive than the charming *R. laevigata* *Anemone*, with its immense single pink blossoms, is more amenable to cultivation. The latter is supposed to be a hybrid of *R. laevigata*, with some other species, but is decidedly tender, though flourishing in some parts of Ireland.

Dwarf roses are now showing bud freely, but nothing like a display is yet to be seen. However, by the time these notes appear, flowers will be more plentiful, and, with favourable weather, July should bring much beauty to the rose garden. The so-called dwarf Polyanthas deserve to be widely known and freely planted by all who love breadths of colour in the garden. Already quite a number of them are opening their flowers, and they have the merit of continuing in bloom until winter; in fact, quite beating the "bedding" plants and the herbaceous borders in the way they maintain their brilliance to the last.

Some complaints of disease are about already. A correspondent lately sent specimens of leaves affected with leaf spot *Septoria rosarum*. An effective method of dealing with this fungus is to spray with Potassium Sulphide at the rate of $\frac{1}{4}$ oz. to a gallon of water, or if the attack is slight, and the plants few, dust the affected leaves with Flour of Sulphur.

Aphis or Greenfly will continue to be troublesome unless carefully watched and sprayed at once. Here the roses were sprayed twice at an interval of about a month with tobacco solution, hence, "Fly" is hardly evident.

The long spell of drought, though broken by a thunderstorm early in the month, is still having a retarding effect on roses in light soils, and more rain would be welcome at least to the roses. In such soils keep the surface well loosened with the hoe, and on hot evenings an overhead sprinkling will be beneficial.

Nothofagus Obliqua.

THIS fine Chilian Beech, more commonly known as *Fagus obliqua*, is growing with great freedom in the Botanic Gardens at Glasnevin and is apparently perfectly hardy. It has come through the very severe winters of the last few years quite unscathed and promises to be an elegant tree of slightly weeping habit. The leaves are from two to three inches long and from three quarters of an inch to an inch wide, toothed on the margins and somewhat glaucous on the under surface. The specimen in the Arboretum at Glasnevin, is, perhaps, about thirty feet high and has been planted only a comparatively short time, not more than eight or nine years.

N. Antartica, near by, also seems like becoming established but is much younger and has not yet made such good annual growth.

X.

The Flowering of Fruit Trees.

IN common with plants of all kinds, fruit trees surpassed themselves this year in the prodigious wealth of bloom produced. Never did our fruit gardens present a fairer sight or give greater promise of a fine yield. As a correspondent pointed out last month, it is perhaps early to prophesy as to the crop, but it is possible now to see fair indications of at least an average crop of apples, even a large crop in some instances. The long drought, however, caused some concern, and some complaints have come in of whole trusses of flowers failing to set, although neither fungus, disease nor grub could be discovered. Fortunately the wealth of bloom was so great that there is every hope that there will be a good average crop throughout the country. In the present issue of IRISH GARDENING will be seen an illustration of part of the fruit garden at Carrigoran, Co. Clare, where the cultivation of fruit is a feature.



IN THE FRUIT GARDEN AT CARRIGORAN.

Viburnums.

SOME of the most attractive shrubs in June are the Viburnums, the best of which flower at this season. Generally speaking, the most attractive species are deciduous though the evergreens are of considerable merit for their foliage. There is not much difficulty in cultivation but good soil is essential to proper development; poor, dry soil results in stunted growth and a poor display of flowers. Shelter is necessary for such species as *V. rhytidophyllum*, whose large handsome rugose leaves suffer in exposed positions, and *V. macrocephalum*, which, though Chinese, and discovered long ago by Robert Fortune, is tender and should be planted in a sunny position protected from harsh east and north winds.

A large number of new species have been introduced from China during the last decade or so, and some distinct and useful shrubs are included among them, and some of not very much garden value. The following selection includes some of the best that have come under the writer's observation but by no means includes all the species amenable to cultivation in the open in this country.

It may be a convenience to separate them into evergreen and deciduous species as a guide to intending planters.

EVERGREENS.

V. coriaceum forms a large bush and has every appearance of making a small tree if encouraged to develop in that direction. The flowers are white, produced in corymbs from July onwards, but are not of much decorative merit. The leaves, however, are large and handsome, up to six inches or more in length and half as wide, and of a peculiar blue-grey colour on the upper surface, due to the presence of a waxy layer which comes off when rubbed. A native of China and the Himalaya this makes a distinct plant for a large shrubbery and would doubtless do well in an open woodland or margin of a plantation.

V. Davidii forms a low compact mass though spreading laterally to some extent. The leaves are of good texture, shining dark green above and in shade, at least six inches long and about a third as wide. The flowers are not of much account, being whitish, but as a low evergreen for a shady position this species is quite desirable. Introduced from China some fourteen or fifteen years ago, *V. Davidii* is now fairly well known in collections.

V. cinnamomifolium is said to be allied to the above but differs in habit, being more erect, with every appearance of ultimately reaching a considerable height. The leaves also are not so large but nevertheless attractive, and in its way it may be more useful than *V. Davidii*.

V. Harrisonii is quite an attractive species of neat habit, the branches clothed with roundish ovate leaves half an inch or so long and deep dark green in colour. The flowers produced in umbels are white and not unattractive.

V. Henryi is a most distinct shrub said to reach a considerable height, but here at least not flourishing and suffering badly each winter. Elsewhere in Ireland, however, I have seen it doing well. The narrow, oblong leaves are dark lustrous green above, while the inflorescence is distinctly branched in the form of a panicle. The flowers are not particularly showy but are followed by red fruits, which ultimately become black.

V. odoratissimum is better known in Irish gardens as *V. Awatuki*, and is a handsome evergreen, particularly where it can be grown in the open; in many places it requires the shelter of a shady wall. When growing well the leaves will make quite six inches in length and nearly half as wide, and are of a fine glossy green colour. The flowers are white and sweetly scented, produced in large panicles, but not very freely as far as I have seen. Certainly one of the best evergreen species for mild districts, and worthy of wall culture where the climate is less favourable.

V. propinquum is one of the Chinese set introduced from China by E. H. Wilson on several occasions. It was thought to be less hardy than some, and was given a sheltered position but rapidly outgrew its space, and other plants in the open are proving quite hardy. Quite an interesting addition to the Viburnums, but of no outstanding merit so far as my experience goes.

V. rhytidophyllum has received, perhaps, more attention than most of the newer Chinese species, and is certainly a handsome and striking evergreen when growing in good soil in a sheltered position. It is perfectly hardy, but the large leaves, seven or eight or more inches long, suffer from harsh winds in winter, and in these circumstances present rather a miserable appearance. Where happy, however, the large, deeply-wrinkled leaves always attract attention. The flowers are produced in large flattish umbels and remain in the bud state during winter, expanding in spring, and followed in autumn by red fruits soon becoming black. The ornamental value of this species lies in the leaves.

V. Tinus only calls for passing reference. As *Laurustinus* it is well known in nearly every Irish garden, and is not exceeded in general usefulness by any other species new or old; in fact, very few can equal it. Hardy, evergreen and free flowering over a long period in early spring, what more could be asked of any shrub? We are apt to be carried away in our enthusiasm for new things, but all reasonable people will agree that no new species supersedes the *Laurustinus*.

V. utile is a spare habited shrub with rather slender branches and smallish leaves one, two or more inches long and white on the under surface. The flowers are produced in May, as is usual at the ends of the branches, and are white but not particularly showy. The fruits are dark blue or nearly black. This plant has lived in the open but I am not convinced of its hardiness.

DECIDUOUS SPECIES.

V. betulifolium seems likely to make a useful shrub and is one of Wilson's introductions from China. The brownish branches bear leaves two or three inches long and varying somewhat in shape. They are dark green above, rather paler beneath, and though not remarkable a well grown bush is distinct. The flowers are white, not particularly attractive, but are followed by red fruits in autumn.

V. buddleifolium is not so entirely deciduous as most of the other species under this heading. In sheltered positions at least it will carry some of the old leaves right through till spring. The leaves are quite handsome, up to four or five inches long, broadly lance-shaped and felted below, and with hairs also on the upper surface. Flowers white and fruits black. This will in time make a useful shrub.

V. Carlesii, lately written of in this Journal, is one of the most attractive spring flowering shrubs in the garden. In habit it is somewhat sparse and

open, with ovate leaves up to three inches long, dull greyish-green in general effect. The clusters of flowers are at first slightly pink but soon become pure waxy white and are deliciously fragrant. This species is a native of Corea.

V. colinifolium forms in time a tall shrub of ten or twelve feet, and bears large nearly round leaves, very downy below and sufficiently so above to appear grey in colour. The white flowers are produced in fairly large cymes, and are followed in autumn by clusters of fruits which ultimately are black. This is a useful shrub for large shrubberies and woodlands, and is striking in autumn when fruiting well.

V. macrocephalum is not the hardiest member of the genus but bears the largest flower trusses of any; they are composed of sterile flowers only and are consequently very striking. In shelter or on a wall the leaves will reach four inches in length. A plant is growing in an angle of the glasshouses in the Botanic Gardens at Glasnevin and generally flowers fairly well.

V. Opulus var. *sterile*, "The Snowball Tree," is too well known to call for much description. It cannot be omitted from any collection of shrubs where *Viburnum*s are included. It is the sterile flowered form of the "Guelder Rose" *V. Opulus*, in which the outer flowers only are sterile and



THE GUELDER ROSE *VIBURNUM OPULUS STERILE*.

V. hupehense is one of the Chinese species introduced by Wilson, and thrives remarkably well in Mr. Armytage Moore's garden at Rowallane, Co. Down. There it has grown into a large bush, and when I saw it some weeks ago looked very promising. I have not seen the fruit, but to the best of my recollection Mr. Moore described it as being of a beautiful red, and he was certainly high in praise of the shrub, which he described as one of the finest things he possessed.

V. Lantana, the "Wayfaring Tree," is an old and well known species calling for little description. It is frequently conspicuous in autumn when dressed in its numerous clusters of red fruits, which, when fully ripe, become black.

V. lobophyllum is again one of Wilson's introductions from Western China, and is likely to become popular as an autumn fruiting shrub. It is in the same series as *V. betulifolium*, *V. hupehense*, &c., and has obovate-pointed leaves and white flowers, which are followed by red berries. Apparently a good grower this should be a useful plant for autumn effect.

showy, the centre being composed of comparatively inconspicuous fertile flowers.

V. tomentosum is a fine species with nearly horizontal branches arranged in tiers and furnished with rather oval pointed leaves. The flat trusses of flowers are very evenly arranged along the branches and are composed of large white sterile outer flowers surrounding numerous small perfect ones in the centre.

V. tomentosum var. *plicatum* is much showier and, as a rule, more popular than the preceding. It is similar in habit but all the flowers are sterile and, as a consequence, much more effective. I lately saw a very large bush of this variety in full flower in the grounds of Castlewellan and have rarely seen anything finer or more effective.

V. Vitchei bears considerable resemblance to *V. Lantana* and is of the same vigorous habit. It differs from *V. Lantana* in botanical characters. The flowers are white and are followed by red fruits turning black as in the latter species.

Journal of the Royal Horticultural Society.

VOLUME 44 contains numerous articles of much interest to gardeners and scientists. Among the chief articles are "Soil Making," by Dr. Russell; "How Amateurs may Secure three Successive Crops a Year," by W. Sutton, F.L.S.; "Food Value of Vegetables," by F. Stoker, M.B., F.L.S.; "Root-Knot Disease of Tomatoes," by R. Robson, M.Sc.; "Experiments with Potatoes," by J. Wilson and F. J. Chittenden, F.L.S.; "Paradise Apple Stocks: Fruit and Blossoms," by R. G. Hatton, M.A.

Useful contributions from the Wisley Laboratory include "Control of Narcissus Eelworm," by J. K. Ramsbottom, N.D.H.; "Effect of 'Place' on Yield of Crops," by F. J. Chittenden; "On Double Stocks," by P. J. Jaramillo and F. J. Chittenden. There are also reports on Runner Beans, Climbing French Beans, Leeks, Vegetable Marrows and Stocks, all at Wisley.

The report of the Consulting Chemist, List of Donors of Seeds and Plants, Book Reviews, Notes and Abstracts, all contribute to the interest and value of the volume, and the Society is to be congratulated on the useful work achieved.

Royal Agricultural Society of England HORTICULTURAL SECTION.

THE Horticultural tent at the R.A.S.E. Show at Cardiff was unfortunately not in a very central position this year, but those who have found it so well worth a visit at previous "Royals" will have taken some trouble to find it and been well repaid.

The flowers were all fresh and gay and appeared to have travelled well, but owing to the drought in England the herbaceous exhibits were not so varied as usual.

MESSRS. ARXDALE, SHEFFIELD, made a feature of English Irises, the best of which were "Adorable," white with petunia streaks; "Lord Derby," pale mauve; "La Grandesse," white, and "La Nini," a large purple bloom. *Eremurus Bungei*, yellow with orange stamens, was also very handsome.

Delicate bouquets of rose and blush pink Paeonies "Nimrod" and "Perfection" showed well in front of some spires of pale blue Delphiniums, fringed by groups of misty blue *Erigeron*.

HARKNESS OF BEDALE, YORKS, had a well staged exhibit where Oriental Poppies made vivid splashes of colour, backed by a hedge of infinitely varied Lupins shading from purple to pink and white, and amongst them I noticed a new red-purple which was very effective. *Asperula Hexaphylla*, very like the more humble Wood-ruff, but on a taller stem, made a delicate lace-like edging in front, and it appeared to be a revival as I was told that "it is an old friend which had been lost."

Gaillardias "Mrs. Lascelles" and "Mrs. MacKellar," the latter a bright sienna-red, looked very gay but were reported to be only half their usual size owing to drought.

A new Lupin, "Royal Favour," is a delicate buff pink, rather like some of the *Verbascums*.

Geum "Mrs. Bradshaw" and *Campanula Dahurica* *Glomerata* made a very rich colour scheme and would be a good addition to an herbaceous border.

We in Ireland are accustomed to expect much from Messrs. Robertson of Rush but their

Spanish and English Irises seemed better than ever. Of the former "W. T. Ware," sulphur; "Beauty," mauve with an orange centre; "Thunderbolt," as threatening and lurid as its name, and "Czar Peter," bright purple with an orange centre, were amongst the finest, while of the English Irises "Prince Oscar," red purple, and "Cornac," a cool mauve splashed with purple, were the most attractive. *Gladiolas* "Peach Blossom" in recurring clumps made this stand a fine blending of pink, purple and yellow.

MESSRS. GODFREY OF EXMOUTH had a good class of *Pelargoniums* brought into prominence by the cool greys of *Cineraria Acanthifolia* at the back. "Prince John," dark crimson; "Ruby," well named; "Lt. Warneford," handsomely marked; "Prince," rosy with dark marking, and "Dazzler," scarlet-rose, were the most noticeable *Pelargoniums*.

"Pride of Exmouth," a huge and luscious pale mauve scabious, was a delightful novelty, and grouped in quantity would be very striking.

Solanum Wendlandii tempted one greatly, but as it is not hardy at Exmouth is only for those who have cool houses.

Petunia "Violet Girl" is the darkest purple I have met and also looked well next to the grey *Cineraria*.

Escallonia Langleyensis is not particularly new but seemed a different shade from those I have seen before.

A new *Pyrethrum* with pale sulphur flowers, like a Tansy, quite hardy and growing in a bush about fifteen inches high, was most desirable, but unfortunately not on sale as all of it is being kept for propagation.

MESSRS. BROADHEAD, WOOLDALE NURSERIES, THONGSBIDGE, Huddersfield, had an exhibit of rock plants shown as well as ever I have seen them. Little flat terraces of dour grey rock backed by small dark pines did all that was required to bring into prominence the not very demonstrative treasures so dear to the rock and alpine enthusiast. Most of these plants are well known, but I noted specially *Sedum crassifolia* Poltsii, delicate pink and green, almost opalescent; *Cotyledon simplicifolia*, yellow; some important little plants of *Juniperus communis aurea*; *Allium narcissiflora*, a most charming burnt rose colour, with four flowers in a head, very delicate and quaint; *Sempervivum Allioni*, large flat stars shading from pinkish green to bronze; *Sempervivum Moggridgei* had four inch stems of profuse rose-pink flowers and seemed to be a form of *Sempervivum arachnoideum*; *Sempervivum elaeagnum*, a flat, obtuse-pointed, pink and green rosette.

Thymus coccineum was specially well flowered. *Calceolaria Polyrhiza*, a pixy looking person, yellow with red spots, quite tiny and delicate.

MESSRS. RICH & CO., BARN., had a very showy *Gaillardia*, "Sunshine," yellow with a red band next the centre. The filmy green of *Alchemilla* major was cool and effective on this stand, and "Louise Sauvage," the darkest crimson rambler rose I have seen.

MESSRS. JARMAN OF CHARD had four varieties of Sweet Sultans, yellow sulphur, white and mauve, which reminded me that these delightful tufty flowers are too often absent from herbaceous borders.

Their cut Roses were very good. "H. V. Machin," crimson; "Margaret D. Hamill," gold; "Mrs. Charles Russell," bright rose with roundish petals; "Coronation," like a pale la

France, and "St. Helena," a creamy pinkish yellow, were among the best. The single pillar roses "Diabolo," a very showy rich crimson, and "Lady Curzon," like a huge pink wild rose, were wonderful, and "Scarlet Climber" double, should find a place with a dark background.

DICKSON OF NEWTOWNARDS had single pillar Roses of the most wonderful colouring imaginable. "Irish Fireflame," orange buds, opening paler, and bronze foliage; and "Irish Afterglow," almost scarlet. "Mrs. C. V. Haworth," double, orange-rose shot, was also most attractive.

In Sweet Peas there did not appear to be anything very new.

"Mrs. Forde," a white rose with a reddish pink edge, was rather striking.

BLACKMORE AND LANGDON'S Begonias were lovelier than ever, and larger, as were the prices, quite unsuitable, alas! to war and peace taxed purses. "Mrs. Brunton," pink (only a guinea each!); "Christopher Spry," rose pink, and "Moncrieff," fringe-edged pink, seemed the most desirable. The war has wrought many changes, and one missed old friends among the exhibitors, but what was to be seen was well worth a visit.

M. B.

Summer Pruning Deciduous Trees.

TOWARDS the middle of July most deciduous trees have completed their annual growth and are plumping up their winter buds. From that time onwards much good work may be done in training and regulating the growth of young specimens and of maintaining older trees in shape and vigour by the removal of unnecessary branches.

Every one who has specimen trees to manage knows quite well that young trees in nursery quarters, or even permanently planted, are not in the same position as young trees planted under forest conditions. In the forest the lower branches are automatically killed off by want of light and the leaders grow straight upwards.

In the nursery, however, where the trees are transplanted regularly more space is given as the specimens grow; hence the lower branches do not suffer so much from want of light and continue to grow. By a judicious shortening of the side branches in summer the buds on the higher branches are strengthened and will start away with greater vigour the following spring. Leaders that may not be developing quite satisfactorily may be greatly assisted by shortening back a few of the side branches just below them. The following spring, if a leading shoot is not so straight and strong as it might be, it may be shortened back to a good bud and will break away vigorously. In the case of trees with opposite buds, if both "break" one should be rubbed off early and the other will quickly become a good leader.

Older trees that may have become too dense and are not growing to height satisfactorily may have a number of the branches thinned out, this work being more readily carried out while the leaves are on, and the most suitable branches to remove can be more readily seen. Two men are necessary to do the work properly, one in the tree and the other on the ground to point out the branches to be removed. At this time, too, young trees that may have been planted for a year or two, but are not going ahead in a satisfactory way, will benefit from a soaking of liquid manure; this will plump up the buds and encourage the trees to make roots, with every chance of a good start next year.

ARBOR.

The Apple Crop.

FROM an examination of the trees in the third week of June one is better able to estimate the prospects of this crop than was possible earlier in the season. So far as the writer can judge the Apple crop is going to be good. It is possible, however, the quality and appearance of the fruit may not be so good. The prolonged drought of May and June is bound to have an effect, and if rain does not soon come this effect will be pronounced.

Apple sucker was present in the flower trusses of several varieties, but no damage to signify was done. A great deal of bloom and fruitlets dropped but this happened to trees on which no suckers were attacking. The dropping of so many of the fruitlets was in itself a good thing, as otherwise much thinning of the fruit would be necessary. The well-known ermine moth caterpillar was noticed on some trees, but little damage was done beyond some eaten leaves in the neighbourhood of their tents. Winter moth caterpillar was observed also, but only in isolated cases.

Indications as to cropping are given in the following list of well known varieties:—

Very good.—Beauty of Bath, Gladstone, Royal Jubilee, Domino, Prince Edward, Early Rivers, Frogmore Prolific.

Good.—Lord Derby, Branley, Hector McDonald, King's Acre Pippin, Golden Pippin, Cat Head, Bismarck, Duch Mignonne.

Medium.—Cox's Orange Pippin, Allington Pippin, Grenadier, Golden Spire.

Poor.—Lam's Prince Albert, Lord Grosvenor, Thomas Rivers' Early Victoria.

D.

Queries.

INCINERATOR FOR GARDEN RUBBISH.—A correspondent would be glad if any of our readers could give directions for making an incinerator for burning weeds, &c.

NOTICE

READERS are invited to submit questions bearing on gardening in any of its branches. It is our desire to stimulate and encourage gardening in Ireland, and we are in touch with experts who will be glad to give every assistance.

We are always open to consider articles, and would be glad to receive photographs—of gardens or plants—for publication, if suitable; senders will oblige by stating whether payment is desired in the event of publication.

Contributions should reach the Editor not later than the 15th of each month.



Allotments.

COMPETITIONS.—The month of July is probably the most satisfactory time to carry out the judging of allotments. When the adjudication is done later many of the best cultivated plots are not looking their best owing to the early crops having been removed and their places taken by newly planted crops. The Royal Horticultural Society publish a set of rules for judging cottage and allotment gardens, and a companion judges' sheet is also issued. We have found these rules useful and have adopted them with slight revision to suit our own local conditions. We have not found it necessary to advise plotholders that their section will be judged on any particular day. This gives less opportunity to the man who makes a special effort to clear up for the day of judging, and also eliminates the possibility of transplanting from outside sources, and other minor species of fraud which seem inseparable from competitions and shows of every description. Despite these drawbacks the competitions have proved a healthy stimulus. Apart from the fact that a man may not desire to enter for the competition, he usually cannot help but observe and adopt the methods by which other men's crops have been brought to a higher perfection than his own.

GENERAL WORK.—If the Celery crop has not been planted this should be done at once. For details of planting see the Notes for June. A few seeds of Cabbage may be sown at the end of the month to give early supplies next year, but the main sowing should not be made until the first week in August. In any case a variety that is not susceptible to "bolting" should be chosen, such as Flower of Spring or Ellan's Early. A few more seeds of Lettuce may be sown for succession. If Parsley is sown now it will be useful in the spring and early summer. Stake Peas as may be required. Carrots, Parsnips, Beet and Turnips should not be allowed to become overcrowded for want of thinning. Where crops have failed quite a good deal can be done by sowing seeds of vegetables that mature quickly. Among these may be mentioned Early White Turnips, Beet of the Globe varieties and Early Horn Carrots. Even if sown in July and August useful crops can be obtained before the winter. It is essential, of course, that the plants should receive no check in their growth and should be thinned out early. Again, should the weather be very dry a good plan would be to make the drills and water well before sowing. The above remarks apply, of course, more to vacant ground than where crops have failed. All the ground that can be spared

is now easily planted up with autumn and winter crops.

LEeks.—As the ground becomes available Leeks should be transplanted. The objective to be kept in mind when growing this crop is to get a good firm, white neck. This is achieved by blanching. There are many ways of planting Leeks; in special cases they may be planted in trenches and treated the same as Celery, or the plants may be grown on the surface and the stems wrapped in brown paper. The method we usually adopt is to plant in rows about twelve inches apart and about nine inches between the plants. With a flat dibber holes are made about 8 inches deep and the plants dropped, with just sufficient soil to cover the roots. The holes eventually become filled up and by this method good useful Leeks are obtained without unnecessary labour.

ONIONS.—Potato Onions and Shallots will be showing signs, by the leaves turning yellow, that their growth is complete. Lift the plants and turn the base of the bulbs towards the sun. Occasionally when this is done a considerable amount of rain may fall and the plants will be liable to form new roots. This should be prevented by turning the crop or removing it to a shed. When properly dried tie them on ropes and store away for use as required.

WINTER GREENS.—One of the advantages of cropping an allotment in a systematic manner is the lengthened period that vegetables may be obtained from the plot, and allotment holders should now be keen directly potatoes are being lifted to get the ground planted with winter greens. In fact, with Potatoes of a dwarf habit as soon as this crop is finally earthed up, Sprouts, Broccoli, Savoys and Curled Greens may be planted between the rows. Where vacant ground is available we plant in rows two feet apart and allow 25 plants across the plot (thirty feet).

POTATOES.—As the growth of Potatoes proceeds earth the plants up. This simple operation is too often improperly done. Sufficient soil is not drawn to the plants. Runners, high up the stems of the plant, which will produce tubers, are not covered. Some kinds of Potatoes have a tendency to throw the tubers high, and if they are not covered with soil the tubers become green with light and unfit for use, or else they are diseased quickly, being exposed on the surface. Again, on dry soils, or in a dry season, it is a bad practice to earth the sides of the furrow like the roof of a house, as the rain is cast off. A farmer who plants with a good width between the drills and earths up with a plough does the operation better as a rule, because he automatically leaves a flat top between the plants.

POTATO SPRAYING.—To get the best results from spraying at least two applications should be given. We have been using the 1 per cent *Burgundy mixture*, i.e., 1 lb. of sulphate of copper and 1½ lbs. of washing soda to 10 gallons of water. This being only half the strength we usually applied means a considerable saving in the cost of materials.

THE FLOWER BORDER.—Border Carnations may be layered this month and cuttings of Pinks inserted in sandy soil; also cutting of Violas and Pansies may be taken. Seedlings of Wallflowers should be thinned out early, otherwise one does not get the bushy habit in this plant, and the plants become long and seldom make good specimens.

G. H. O.

The Month's Work.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

THE SHRUBBERY.—Hardy shrubs that will be in full beauty during this month will include the Philadelphuses, the Escallonias—of which Langleyensis, with its gracefully arching growths, covered with rosy flowers, is one of the best—Spiræas (shrubby), red and pink, and the beautiful white Spiræa arifolia, Cistus Laurifolius, Cytisus Carlieri, and many others. Recently planted specimens will require watering during dry weather, and a mulch of grass mowings will be beneficial.

HERBACEOUS BORDERS will now require constant attention. The plants will be growing rapidly and staking and tying will be a constant need. A natural effect should be aimed at in this work, as the best grown plants will fail to please if they are clumsily or too stiffly tied up. If short twiggy peasticks were inserted amongst groups of annuals as advised last month the plants will by now have grown up through these and have hidden them. Annuals staked in this way will withstand very heavy rain and wind storms. The borders should be hoed frequently to keep down weeds and to conserve the moisture in the soil.

Flower beds filled with summer bedding plants will soon be at their best. If watering is necessary it should be applied in the evening and the soil hoed over the next day, as one good watering followed by hoeing has a much better and more lasting effect than frequent applications of cold water to the plants. Remove all dead flowers weekly and keep the edges of the beds trim and neat.

Border Carnations will soon be in full beauty. To prolong the flowering period pick off all faded blossoms and keep the plants well watered. As the different varieties pass out of flower the young shoots should be layered. Some finely sifted soil containing leaf mould and sand should be placed around the plants. Select the strongest growths and cut a tongue in them about an inch long commencing just below a joint. Press the shoot down into the fine soil with the tongue well open, peg it in place, and water in as each plant is finished. Suitable pegs can be cut from bracken stems or worn birch brooms. The layered plants should be sprinkled with water every evening during dry weather.

THE VEGETABLE GARDEN.

PLANTING.—The latest batches of Leeks should now be planted and thoroughly watered in if the weather is dry, and Autumn Cauliflowers and Broccoli may also still be planted. As the early crops are cleared the ground should immediately be filled up with Winter Greens. Curly and favourite Kales, white and purple sprouting Broccolis, Savoy and Coleworts will form a profitable second crop, and will be much appreciated during winter and early spring.

For the latest Broccolis, which will mature in May and June of next year, firm ground is necessary to ensure slow and sturdy growth to withstand the severe frosts of winter. The site of a

recently cleared Strawberry bed answers their requirements admirably. The Strawberry plants should be cut off with a spade, and with the straw litter be burnt on the ground and the ashes scattered over it. The Broccoli plants may be put in with a crowbar if the ground is too hard for the dibber. They should be well watered in with manure water, and the hoe kept going amongst them after they have been planted a fortnight.

SOWING.—A further sowing of Dwarf Beans may still be made, and frequent sowings of Lettuces for providing autumn Salads. For this purpose a sowing of Batavian Endive made now will provide useful heads in September and October, and towards the end of the month the main batch of Endive for winter salading must be sown.

Spinach Beet sown now will provide a plentiful supply of leaves during winter, and until the first true Spinach is ready in the spring.

About the 24th of the month is a good date to sow Cabbages for early spring cutting. The plants from this sowing will be ready to plant in September on the ground now occupied by Onions. The ground should not be dug but only hoed over, and drills drawn three inches deep and eighteen inches apart, in which the Cabbage plants may be dibbled at one foot apart. At the first hoeing the drills may be levelled in and will thus provide a slight earthing up as well as a mulch to the roots. It will be advisable to make a further sowing of Cabbage seed a fortnight after the first for succession, and in case the earlier and softer plants may be injured by severe weather. All seeds of the Cabbage tribe, which, of course, includes Turnips, should be moistened with paraffin and rolled in red lead before sowing; this will effectually prevent birds interfering with them, and Lettuce seeds may be similarly treated.

When lifting early and mid-season Potatoes the "seed" for next season should be carefully selected first and placed in the sprouting boxes. If the weather is dry these may then with advantage be left out of doors for a few days, so that the "seed" may be well greened before storing in a light, airy shed for the winter.

THE FRUIT GARDEN.

THINNING.—In spite of the wonderful promise at flowering time this operation will be necessary in only very few orchards in the case of Apples this season. It is difficult to account for the bad set of this fruit, as the weather conditions seemed ideal when the trees were in flower. At that time mild, showery weather prevailed, with a complete absence of frost, and rain was plentiful here, over four inches being registered during the month of May.

Plums, however, have set a heavy crop, and the final thinning of these may now be carried out. If this is neglected the fruit will be small and of poor flavour, whilst the trees will be exhausted and may take years to recover.

Summer pruning of Apples and Pears should now be attended to, and should not be neglected in the case of trees that are not carrying a crop. Really, it is the more necessary for these, because the absence of fruit is causing them to grow with greater vigour, and the removal of useless growths, and the shortening of others, is essential to allow free access of sun and air to all parts of the trees, so that the fruit buds may be well developed and thoroughly ripened for next season. This, I consider, is the chief advantage of summer pruning in all cases, although incident-

ally it also improves the current year's crop in both appearance and flavour by exposing it to the air and sunshine.

Strawberries should be layered as soon as possible to have strong plants for planting in August. It is usual to trench the ground for these the previous winter, and then crop it with mid-season Potatoes. When these are lifted it is only necessary to rake the ground level before planting the Strawberries at two feet apart each way.

GATHERING FRUIT.—The first Plums will be ready to pick at the end of the month. They should be gathered when perfectly dry and used or marketed at once. Apples, such as Early Harvest and Mr. Gladstone, will also be ripening, and are best gathered a few at a time as they become fit, as they do not improve with keeping. Pears, such as Jargonelle and Williams are best picked just before they are quite ripe, and allowed to mature in a cool fruit room. They must be closely watched and used directly they become mellow, as they only last about two days in good condition when fully ripe.

Midland and Northern Counties.

By W. ROBERTS, Gardener to Lady Emily Bury
Charleville Forest, Tullamore, King's County.

KITCHEN GARDEN.

PLANT OUT Broccoli. The position should, if possible, be an open one, bearing in mind that the crop does not follow well upon Cabbage, Turnip or Cauliflower. The soil for autumn or early winter supplies should be of good quality, deeply cultivated and well manured, but for those intended for spring and summer use ground not too freely enriched is more suitable and the firmer the better. The distances may range from two to two and a half feet each way, although some of the medium sized sorts that have to stand through the winter may be put a little closer together; plant firmly and, if possible, during showery weather. The sprouting varieties, both white and purple, are invaluable for winter and spring use, a consideration where space is limited.

CELERY may be got in where circumstances prevented it being done last month, and for a succession, also Leeks; these require good ground if large roots are required, but they do very well following early Potatoes. The general plan is to use a good long dibber and simply drop the plant into the hole, the subsequent rain or watering being sufficient to give them a hold; it is usual to shorten the leaves a little at time of planting. On very light soils it is better treated as for Celery. Sow a few Dwarf and Runner Beans and Early Peas as a catch-crop.

Take up Garlic and Shallots when ripe, also Potatoes as they become ready. Sow Parsley in a sheltered spot to stand the winter or to transplant to frame later, also Turnips in quantity. Prickly Spinach and Spinach Beet. A sowing of Cabbage should be made early in the month to have fit for planting out in September, selecting varieties suitable, Sutton's Harbinger, April and Flower of Spring being the best I know and mature in the order named. I have grown thousands of these varieties and seen them growing elsewhere without being able to find a single wrong one. Select a perfectly open position for seed-bed if possible, and either plant out or transplant before they become drawn or crowded. Keep the ground constantly stirred and, where necessary, mulch vegetables as much as possible.

FRUIT GARDEN AND HOUSES.

Layer Strawberries for planting next month. Where pots are not available square pieces of sods of loam answer well. Squares about four inches by four inches are best, and the runner simply pinned down on the clay side and kept watered soon takes root, and if kept close together when taken off the foliage prevents the roots round edges from suffering until ready for planting. Many prefer three inch pots, but they must be planted out before becoming pot-bound or they do not give best results. The recent heavy rains have greatly benefited the crop round here and further north, and which, I believe, on the whole, above the average, and those dabbling in sales satisfied with prices. Wall fruits, especially Pears and Apples, and also orchard and bush trees, have been very badly infested with caterpillars, moths, &c., and shows the necessity of winter work in this direction—spraying, grease bands, &c.,—as where any considerable number are infected it is a very troublesome operation washing the trees now when so many other things require constant attention. Peaches in unheated houses that have been tied in, and approaching or arrived at stoning period, will benefit from a good dressing of ground or slaked lime applied and watered in at a time when the borders are nothing like dry. The same remark applies to Vine borders in or out of cold houses. In the case of the Vines a little extra care in ventilating and not shutting up too early will prevent scalding at this period, and where foliage is scanty a little temporary shading, such as thin whitening syringed on during a dry day, will be a help, and if it is washed off after a time by rain no harm will accrue, and, as I have already stated in a previous article, do not be stingy with the supply of water, weak liquid manure, and approved artificials where the other conditions are right, and where such conditions do not obtain it is only a matter of ingenuity. Melons ripening will require a free circulation of air and not too much moisture at the roots or otherwise. Those in frames and hotbeds will require to have the temperature maintained somehow; if in wooden movable structures the manure round the outside can be renewed, and if not you can only trust to luck and careful manipulation of the lights. Tomatoes in unheated structures planted, say, early in May, should have at least five or six trusses of fruit and flower, at which period I would advise stopping, thereby enabling the plant to ripen the greater part of its fruit. If left to grow more than this the result will be a lot of green fruits in October and November that will be more of a nuisance than anything else, except where Chutney is appreciated.

FLOWER GARDEN, LAWNS, &c.

Work in this department during this month will consist chiefly of keeping things in order generally: staking, pinching, and thinning the different subjects as they require it, and attention to mowing edging of grass plots, tennis courts and croquet grounds. It is a good time to layer principal batch of out-door Carnations and Picotees; these appear to me to have gone rather out of fashion of late years, for which the American "trees" are largely responsible I suppose, and as if they resented the slight they have practically refused to grow in many places I know of when a few years ago they grew like a weed. Roses in beds and otherwise will require a lot of attention to have and maintain them at their best for as long a period as possible; watering where necessary, mulching, and a close watch kept for Aphis and Mildew, being amongst the principal requirements.

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Irish Gardening

Contents

	PAGE		PAGE
Horticultural Reconstruction	113	Rhododendrons at Drumbrae	124
Notes from Rostrevor (Illustrated)	114	Trial of Strawberries at Wisley	124
Shrubs of July	116	* Allotments	124
Arbutus Menziesii	119	Onion Stirling Exhibition	125
July Flowering Primulas	119	The Month's Work—	
Nuphar Polysepalum	120	Southern and Western Counties	125
Notes from my Rock Garden	120	The Royal Horticultural and Abori-	
Some Indigenous Plants worth Growing	121	cultural Society of Ireland	126
A Horticultural Journey	122	The late Mr. Thomas Smith, V.M.H.	128
Popular Flowers	123	The Lure of the West	128



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IRISH GARDENING

VOLUME XIV
No. 162

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

AUGUST
1919

EDITOR—J. W. BESANT.

Horticultural Reconstruction.

By W. H. JOHNS, N.D. Hort.



THE question of reconstruction in Horticulture is probably of as great importance to Ireland as that of most other enterprises. That the need for reconstruction is great most horticulturists

admit, but the *desire* to reconstruct or to agree on any definite scheme of development seems sadly lacking on the part not only of those who are supposed to have a controlling influence, but also of those who are more closely connected with horticulture. Sir F. Moore has recently pointed out some of the possible forms of development, but so far there seems to be no one prepared to take a lead in doing the necessary work. A discussion of this subject in the pages of IRISH GARDENING might very well lead up to something definite being done, and it is with this object in view that these lines are being written. I would like, therefore, to suggest that, among other aspects of the question, the following are some which might very well form the subject of discussion, organisation, and of energetic and effective development:—

1. *The Fruit Industry.*—Ireland at present, although well adapted for fruit culture, especially that of small fruits, can hardly be said to be producing sufficient fruit to meet the country's needs.

2. *Commercial Horticulture generally.*—That there is a real need for market-gardens, with sufficient glass for the culture of various crops, including Tomatoes, Melons, &c., present prices testify.

3. *Small Holdings.*—The conditions in Ireland are eminently suitable for a great development of small holdings on which horticultural crops would undoubtedly form the staple products. Some time ago notices were displayed promising land, and assistance for such, to those Irish soldiers who enlisted for war service.

It will be interesting to learn to what extent discharged soldiers in Ireland have been given facilities in this direction.

4. *Allotments.*—That allotments in Ireland were doing valuable work before the war is now stale news.

That a big development took place during the war is also well known.

That the demand for allotments was greater than the supply, and that a far greater development was possible is perhaps only properly appreciated by those in close contact with the movement.

The question to be faced at the moment seems to be this: numbers of ploholders who have worked the ground deeply, heavily manured it, and cultivated it as was never done before are in danger of losing—I should say have lost, and are still losing—their plots in order to make room for a crop of Oats, and afterwards a sheep or so or a few bullocks.

Like England, Ireland in its town areas is largely a C. I. and C. III. population, and will be so as long as public opinion prefers to allow bullocks to graze rather than to see well-cultivated allotments and town gardens.

5. *Village Horticulture.*—In the villages of this country the need for a knowledge of gardening and of various aspects of tillage matters is very patent.

The subject of Rural Science—including School Gardening—now taught in a limited number of schools is undoubtedly helping to mend matters a little.

But as this subject is regarded from a purely scientific rather than from a horticultural point of view, it cannot be said to supply the needs of village communities.

The possibilities of efficient classes in Horticulture, including food culture, for the sons of farmers, for farm labourers, and for others interested, either as evening classes or short

courses in farm institutes, might very well be considered as of importance to the whole country.

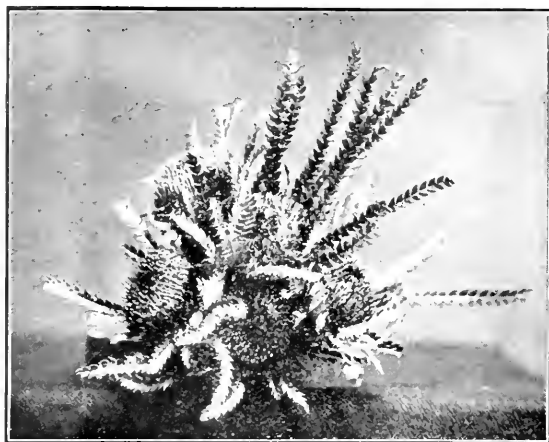
6. *Treatment of Plant Pests and Diseases.*—Here, again, there seems to be a field of work which is waiting for numbers of workers to tackle. To mention a few only on which cultivators desire to get really efficient remedies and cures, I might cite:—

- (a) Silver Leaf in Plums, Cherries, &c.
- (b) Canker in Apples, Pears, and Plums
- (c) Mite or Big Bud in Black Currants.
- (d) American Gooseberry Mildew on Gooseberries.

Notes from Rostrevor.

A NOTE on a few plants that have flowered at Rostrevor this year may, perhaps, be of interest to some of the readers of IRISH GARDENING.

Dryandra formosa is a little known shrub from Australia, belonging to the Protaceæ order. It is an evergreen with a remarkably beautiful foliage, bright green above, white beneath; the leaves are linear, of hard substance and waving, some six inches and more long, narrow, hardly a third of an inch across, and they are cut down to the midrib into regular sharp-pointed lobes, like a large toothed



INFLORESCENCE OF *DRYANDRA FORMOSA*
From a plant at Rostrevor.

- (e) Eel Worm in Daffodils, Onions, and other crops.
- (f) Black Scab or Wart Disease of Potatoes.
- (g) Various Fly Larvæ or Maggot Attacks.

7. *The Development of an Export Trade.*—There are many plants which can be grown as well if not better in Ireland than in other countries. One wonders to what extent advantage is taken of this fact to build up an export trade in those Horticultural products.

8. *Conclusion.*—I trust that I have written sufficient to arouse a discussion and to indicate the need for a Chamber of Horticulture, or some other definitely Horticultural organisation to do some steady work and development.

The Agriculturists have their problems also; but it is hardly likely that many of them will appreciate, as Horticulturists can, the need for a big scheme of Horticultural reconstruction.

saw. The flowers, each some two inches wide, appear at the ends of the shoots; they are formed of numerous florets which, before they expand, are brown in colour, and then become yellow as they open and detach themselves from the undeveloped part of the bloom. It has a strange and uncommon appearance at all times of the year, and it is needless to say that it is very half-hardy, and is, I think, seldom grown in this country. The plant here was put out in the spring of 1916, in a sunny position in an angle between a wall and a greenhouse, facing south, and it is in this way completely sheltered from the north. It fortunately escaped injury during the severe winter of 1916-17, without further protection; but since then we have usually put a sort of curtain round it at certain times during the early spring to ward off the effects of the east winds. It flowered for the first time this year,

and very freely, in May; it is now about six feet high; the leaves here and there are somewhat browned by the harshness of our Irish spring weather.

Isopogon latifolius, also from Australia, and belonging to the same natural order, is a small evergreen shrub, with dark green rather leathery leaves some two inches long by one inch broad. The flower, springing from the end of a shoot, is very wonderful, and somewhat difficult to describe. It is about two inches wide, and the very many florets it contains are purple in colour. It is then not unlike a small cultivated *Chrysanthemum*, such

me to try out of doors—with the result I have just mentioned.

Beshcorneria yuccoides is from Mexico, belongs to the *Amaryllis* order, and is allied to the genera *Fourcraea* and *Agave*. The grey-green leaves, three feet long by three to four inches broad, and streaked irregularly with a whitish graining or kind of tomentum, are somewhat similar to those of an *Agave*, though they differ in being neither thick nor fleshy, and they nowhere are armed with spines or thorns. The flower spike grow twelve feet or more in length, and bends over in a curve by its own weight, about seven inches in girth at



BESHCORNERIA YUCCOIDES
In the Gardens at Rostrevor House.

as one sees under glass in the autumn; but the illusion is soon dispelled when the end of each of the petal-like florets curls slightly back and throws out a conspicuous and bright yellow anther; the bloom when developed has thus a most remarkable appearance, unlike any other I have seen. I put one of these rare plants outside in a very sheltered place in the spring of 1915, and it survived absolutely uninjured the following winter. But, unfortunately, the cold season of 1916-17 proved too much for it, and it was killed. I had another, however, which, kept in a pot, has been housed in a cold frame during the winter months, and it flowered for the first time this year towards the end of May.

I owe both these species to the kindness of Professor Bayley Balfour, who sent them to

the base, and tapering to quite small dimensions at the end; it throws out many branchlets more than two feet long, and is everywhere provided at all the joints with conspicuous bracts of varying sizes. The spike itself, the branchlets, and the bracts are all of a vivid pink tint, more accentuated and deeper in shade in the branchlets; and the flowers that hang down from them, as well as from the end of the spike, sometimes in clusters, are dull red at the base and green at the tip, each from one to two inches long. It is, perhaps, a more curious than an actually beautiful inflorescence. The plant flowered here in June for the first time; it does not seem to object to a little frost, but it is sensitive to the dampness of our climate, and something to screen it from excessive rain seems to be desirable. I have seen it in good

bloom at Howth Castle some years ago, and I owe the plant I have now got to Captain Gaisford St. Lawrence. Another species which I have also attempted to grow is *B. decostriana*, kindly sent to me from Glasnevin to try, but it failed, possibly because it was put out too young, and had not vigour enough to withstand the wet. There is another here that came under the name of *B. superba*; in outer appearance it is very like *B. yuccoides*, but until it flowers it is impossible to say whether it is the same or not.

Fremontia californica is a species better known than any of the above, and coming from California it ought to be hardy in the more favoured parts of the British Isles. It is, I think, rather a shy bloomer, unless it is placed against a wall; it has, however, flowered here in the open, the specimen being about seven to eight feet high. It is a plant well worth having, the flowers, produced in June, being of a bright yellow colour, some two inches across, and harmonizing well with the soft green foliage.

Having raised an *Embothrium coccineum* from seed (I have no record from whom I got the seed) it was put out as quite a small plant in the spring of 1915; it grew very rapidly, and to prevent its becoming a mere slender pole, liable to be uprooted by the wind, it had to be cut down by several feet. It is now some 12 to 15 feet high. It was noticed when a seedling that the leaves were much longer and narrower than those of the ordinary *E. coccineum*, but it soon appeared to lose that characteristic as it developed and increased in size. Last year it produced one solitary bloom, but no special notice was taken of it, as there are other specimens of the species in the place. This year, however, it produced a number of flowers, and then it was perceived that their colour differed from the others, and that instead of being of the usual vivid scarlet which is so well known, they were of a brilliant orange-scarlet tint. It begins to show bloom shortly after the other, but it seems to continue at its best for a much longer time. I sent specimens to friends who are botanical experts, and I am now informed that it is probably a colour variation of the type, but it is also added that no such variations have been hitherto recorded, either they were not observed, or they were not thought to be sufficiently marked for record. The contrast, however, between the flowers on the two trees here is quite distinct and has been very noticeable this year. Whatever it may be, it is certainly a welcome and pleasing addition to the arboretum from a horticultural point of view, even if it has no scientific value.

JOHN ROSS OF BLADENSBURG.

Shrubs of July.

JULY is by no means a dull month in the Arboretum, and it is only by walking through a comprehensive collection that the wealth of material now available can be seen. We are apt to think that the bulk of flowering shrubs are over in May, with, perhaps, a few late kinds in June, but though the number in flower then may be greater, there is now so many new species and hybrids that some may be had in flower throughout the summer. The following have all been noted towards the middle of July, few of them presenting any great difficulty in cultivation.

Buddleia Codielli is a plant for a wall in most places, but in the mildest districts may be grown in the open. It is only fair to state that it does not flower freely every year, but that is no drawback to those who like to have a collection. A native of the Himalaya, it produces handsome panicles of rosy pink flowers, white within, and large, broadly, lance-shaped leaves.

The *Cistuses* or Rock Roses are brilliant shrubs for hot, sunny positions, and flourish often in situations too dry for most other shrubs, except *Helianthemums*.

Cistus crispus is one of the showiest of the dwarfer species, suitable for the rock garden or shrubbery. The somewhat oval leaves have wavy margins, and are densely hairy on both surfaces. The flowers, an inch and a half wide, are rather bright purplish red. There are one or two others rather similar to this.

C. cyprinus is a vigorous grower, reaching 8 feet or more in height. The flowers, produced in clusters, are very large, 2 to 3 inches wide, white, with a dark red blotch at the base of each petal. The leaves vary in size, generally lance-shaped, with wavy margins, dark green above, and furnished with down on the under surface. A very fine shrub.

C. ladaniferus is better known than the last-named, and grows well, making a bush 4 to 5 feet high; the branches and leaves are sticky, the latter from 2 to 4 inches long, narrowly lance-shaped, dark green on the upper surface, and furnished with down underneath. The flowers, produced singly on short side branches, are white, with a red blotch at the base of each petal.

C. laurifolius, also a tall grower, will exceed 6 feet in height when flourishing. The leaves are broader than those of *C. ladaniferus*, margins wavy, upper surface dark green, the lower furnished with down. The flowers are pure white, produced in panicles on short side shoots.

C. purpureus is a very fine species of the dwarfier set, growing about 3 feet, or a little more, high. The leaves are, roughly lance-shaped, varying somewhat; the upper surface grey green, the lower downy. The flowers are large, up to 3 inches wide, deep purple red, with a much darker blotch at the base of each petal.

Clematis Fargesii is a welcome addition, forming a link between the early flowering species and those of autumn. It bears large, pure white, four sepalled flowers, and makes an attractive display when given space to ramble. Useful for bowers and trellis work.

C. montana Wilsoni, a mass of flowers in July, is certain to become popular. The flowers are larger than the commoner early-flowering type, and the plant is equally robust; it, therefore, must become one of the most popular of summer flowering climbers.

The Escallonias must always remain among the most important of summer flowering shrubs, although reputedly tender in some cold inland districts. For most parts of Ireland one or other of the species can be grown, with some care, and for decorative purposes some of the hybrids are unexcelled in their season. Of the species, *E. macrantha*, *E. punctata*, and *E. rubra*, with red or crimson flowers, are most conspicuous; while species with more or less white flowers are *E. Philippiana*, a magnificent shrub where it flourishes and *E. pterocladon*, a fine, upright grower.

Of the hybrids, *E. langleyensis* (*E. Philippiana* × *E. punctata*) is extremely popular, and always admired. It flowers with remarkable freedom and regularity, bearing quantities of delightful carmine-coloured flowers.

E. edinensis is similar in habit, but has paler flowers, while the newer *E. Donard Seedling* is white-suffused pink, the three forming a most beautiful trio.

E. exoniensis, a very vigorous grower of upright habit, forming stout, strong branches, is a hybrid of *E. pterocladon* × *E. rubra*, and rarely fails to give a good display over a long season; the flowers are nearly white, but usually tinted with pink.

Genista virgata, the Madeira Broom, flowers in late June and early July, and is a most attractive shrub of upright habit. It will reach a height of 10 feet or more, and does not object to some shade; in fact, it grows well under trees where the shade is not too dense. The flowers, produced in racemes, are bright yellow, and are produced in small quantities for a considerable period.

Indigofera amblyantha, a twiggy shrub of the Pea family, and lately introduced from China, seems likely to be a useful summer

flowering shrub. It is now about 3 feet high, carrying numerous racemes of reddish purple flowers.

Indigofera hebecpetala is an older shrub in gardens, but not very generally grown. It is not reliably hardy away from a wall, and certainly requires shelter; the flowers, produced in racemes, are rose or rosy crimson in colour.

Indigofera Gerardiana, also from the Himalaya, is perhaps the most satisfactory, producing abundance of new shoots annually from the base, and developing abundance of racemes of rosy purple flowers towards the ends of the branches, and a good bush makes quite a fine display.

Leptospermums one hesitates to write of as hardy shrubs, though evidence is accumulating that home-raised seedlings may prove quite suitable for many parts of Ireland and elsewhere. The common white-flowered *L. Scoparium* has flourished in some parts of the country, forming huge brushes, but the beautiful pink and carmine forms of *Nicholii*, which are grown so well by the Donard Nursery Company, are not yet so common; good bushes, however, are now to be met with in various gardens, such as Rostrevor House; and the remarkably fine stock at Newcastle, where the Donard Nursery is situated, gives rise to the hope that these attractive plants will yet become more common in gardens, few other shrubs giving such fine colour in July.

Lonicera tragophylla, introduced from China some years ago, is in many respects the most distinct and remarkable climbing plant flowering outside in summer. It likes a cool position, and in hot districts some shade. Repeated attempts to grow it at Glasnevin failed, until it was transferred to a shady wall, in cool, moist soil, where it has since flourished. The leaves are dark green, inclined to be glaucous, and the handsome flowers, produced in beads of a dozen, or more in some cases, are bright yellow, up to 3 inches long, with a narrow tube and wide-spreading lobes. This is certainly one of the most remarkable of the Woodbines.

L. Delaragi is quite attractive on a wall, and is apparently perfectly hardy, flowering freely in July. The leaves are green above and downy below; the flowers, produced in pairs, are sweet-scented, and of a pale yellow colour.

L. gigantea superba is apparently the variety *pubescens*, of *L. Etrusca*, and is certainly a most desirable hardy climber. In the Botanic Gardens, at Glasnevin, it is firmly established on an old partially cut down Ash Tree, and annually makes a fine display, covering the branches with clusters of sweet-scented flowers, which are at first yellow-flushed with reddish brown, but fade to deep yellow.

Ononis fruticosa is an ornamental shrub of the Pea family, and closely allied to the common Rest Harrow. It requires a well-drained sunny position, such as an elevated position on the rock garden or a sunny border. The leaves are three-parted, and the flowers, produced in the greatest abundance, are pink, and make a charming display in early July. Seeds are produced freely, and germinate readily.

The *Philadelphuses* are now so numerous, if we include hybrids as well as species, that it would serve no useful purpose to enumerate them all. Many of the old species are still very fine where they can be allowed to develop into large bushes, but many of the new hybrids, especially the doubles and semi-doubles, are, perhaps, more ornamental and floriferous, and likely to appeal to those whose space is limited. Of the older species, none has been more pleasing this year than *P. Lewisii*; a tall grower of graceful habit, the branches wreathed with racemes of white flowers, which have little or no scent.

The following hybrids have more or less double flowers, and are of exceptional merit for flowering in July:—*Virginal*, *Argentine*, *Bouquet Blanc*, and *Glacier*; *purpureo-maculatus* forms a pretty plant, bearing abundance of white flowers, blotched at the base of the petals, with rosy purple. It is apparently a hybrid of *P. Coulteri*, which has the same colouration at the base of the petals, but here is hardly only on a wall.

A better plant than either is *P. Œillet de Pourpre* apparently of similar origin, but with larger flowers than *purpureo-maculatus*, the blotch being deeper in colour.

Platanthus Lyallii, a New Zealand plant, is extremely beautiful when in flower, but, except in the mildest localities, is only hardy against a wall; for this purpose, however, it is very useful, and the clusters of pure white flowers, each with a central mass of yellow stamens, are very beautiful, and never fail to call forth admiration.

The shrubby *Potentillas* are now fairly numerous, and constitute a very pretty and useful group of spring and summer flowering shrubs.

The majority of the more useful varieties are considered to belong to *P. fruticosa*, but they vary in colour and time of flowering. The white varieties—viz., *P. Veitchii* and *P. fruticoso-alba*—flower earlier than the yellow forms, and though flowering to some little extent during the summer, do not keep up a display so long. The best of those flowering now in the middle of July are—*P. l. micrandra*, with deep yellow flowers, and larger leaves than the type,

and also of dwarf habit; *P. f. ochroleuca*, flowers soft pale yellow; and *P. f. Vilmoreniana*, a delightful plant, with silvery leaves and creamy white flowers, not pure white, as in *Veitchii*.

P. Friedrichseni is a good plant, with pale yellow flowers; reputed to be a hybrid between *P. fruticosa* and *P. darurica*.

P. darurica is a useful and pretty little plant of dwarf habit, bearing smooth leaves and white flowers; it is well suited for the rock garden or front of a shrub border.

Spartium junceum, the *Spanish Broom*, is one of the glories of the garden from July onwards for months. It must have a well-drained, warm soil and a sunny position to do really well. The typical plant will grow 8 feet high, and is somewhat apt to become bare at the base. When first planted it should be well pruned back for several years to induce it to form numerous branches. The round, Rush-like shoots are deep green in colour, and bear in July and onwards abundance of rich yellow flowers of rare effect. There is a dwarf variety—viz., *Spartium junceum nanum*—which forms a useful shrub for some positions.

Syringa japonica is a July flowering "Lilac," in good soil making a very large shrub or small tree. It forms large, pointed, opposite leaves of ample proportions when the plant is vigorous, and produces large panicles of showy white flowers in July.

Veronicas are legion in gardens—from the tiny, low growers of the *Bidwillii* type to huge bushes, like *V. Traversii* or *V. salicifolia*.

Of those flowering in July, the following is a selection of the best:—*V. anomala*, up to 3 feet or more in height, with slender branches, clothed with small, dark-green leaves, and bearing at the ends of the shoots clusters of pure white flowers; *V. rakaiensis*, a stout-growing bush of the *Traversii* type, with white flowers; *V. Darwiniana*, dwarfer than the last, flowers in racemes, white, with a faint tinge of blue, and purple anthers; *V. Matthewsii*, a low-spreading plant, with thick leaves, and numerous short spikes of white flowers; *V. pseudo-Traversii*, with leaves much broader than those of *V. Traversii*, the flower racemes also being longer and narrower, while the flowers are pure white; *V. Traversii* is very well known, and is one of the hardiest, bearing abundance of white flowers tinged with blue; *V. Lewisii* has still longer leaves and racemes, the latter made up of numerous bluish white flowers; *V. Ruby Tinge* is a pretty garden variety, bearing numerous racemes of white flowers, suffused or tinged with reddish purple.

Arbutus Menziesii.

A FINE specimen of this handsome tree is growing in the grounds of The Lodge, Rostrevor, the property of Major Lyon. It was planted by his cousin, the late Hon. Albert Canning, the then proprietor, about the year 1866. It is now nearly 60 feet high, girth near the ground 8 feet, and at 5 feet above the ground

United Kingdom. *A. Menziesii* (syn. *A. procera*) comes from California, and is locally known as Madroño.

July Flowering Primulas.

So many Primulas are now in cultivation it is natural that the flowering period should be fairly long.



POTENTILLA VEITCHII

A beautiful shrub from China.

it is 6 feet 8 inches. Unfortunately, a large branch, 3 feet 2 inches in circumference, was allowed to grow from the main stem $3\frac{1}{2}$ feet from the ground, otherwise the girth of 8 feet would have been maintained at 5 feet up the trunk. The tree seems in very good health. It would be interesting to know how it compares with other specimens growing in the

The great majority flower during March, April, May and June, but, fortunately, a few come into July, and, with hybrids, quite a good display may be counted on.

They are mostly tall growers, rejoicing in moist soil, composed of loam and peat, and not averse to sun, though keeping their colour better in shade.

Primula Beesiaana, introduced from China some years ago, is very useful as a late flowerer, producing tall stems 18 inches to 2 feet high, and carrying numerous whorls of pale, purple flowers, a colour not in itself perhaps very attractive, but a healthy colony bearing numerous spikes always attracts attention.

P. Bulleyana is distinctly one of the best of the lately introduced Chinese Primulas, and is so easily grown that no garden should be without it. The orange-yellow flowers, produced in whorls on tall stems, are very lovely in a shady position. Between these two species a fine race of hybrids has been raised, giving many beautiful shades of orange, reddish orange and pink. The hybrids are generally robust and free flowering, and make a glorious display when planted in generous masses.

Needless to say, all the seedlings are not first-rate, and the worst should be weeded out. The finest may be divided after flowering, and those who prefer groups of one colour or shade have endless opportunities of enjoying masses of pink, orange, reddish orange and yellow, in July, by separating the different plants when dividing, thereafter planting them where desired.

P. helodora flowers towards the end of June and right into July, bearing very tall stems, furnished with whorls of clear, yellow flowers. This in a mass is a telling plant, and it is difficult to forecast what may be the outcome of crossing it with some of the other tall growers, but it seems likely that other fine things may result.

P. Smithiana is of the same nature as *helodora*, but rather smaller in all—not so tall, and with rather smaller flowers, also clear yellow.

P. Littoniana will appeal to many on account of its quaint and unusual appearance. It is at first sight altogether unlike a Primula when in flower. It grows from a foot to 15 inches high, having hairy leaves, from among which arise the stems, terminated by dense spikes of small flowers, conspicuous in the bud stage by reason of the bright red calyx; on opening, the blue corolla protrudes, the whole combining to make this a truly remarkable plant.

P. Poissoni is an old favourite, not however quite so easy to do as some others. It likes moisture, but must not be too wet in winter, conditions not easy to provide. The tall stems bear numerous whorls of deep purple flowers, and a healthy colony makes a fine display.

P. Wilsoni, from a garden point of view, resembles *P. Poissoni*, but is a distinctly better grower. It flourishes quite near water, and never fails to produce abundance of tall stems, with numerous whorls of flowers, rather similar to those of *P. Poissoni*, but not so large. There

is no doubt *P. Wilsoni* will become popular on account of its freedom and season of flowering.

Seeds of all the above are produced in plenty, and should be sown as soon as ripe, placing the pots in a cool frame in shade. Some, at least, will usually germinate in a few weeks, and the majority certainly in the following spring. *The seed pots must not be over-watered in winter, otherwise the seeds will rot.*

Old plants should be divided after flowering, and if to be replanted on the same site, a quantity of fresh soil, peat or leaf-mould, and a little well-rotted manure, may be added.

Nuphar Polysepalum.

This remarkable N. American Pond Lily has flowered freely this summer in the Lily Pond at Glasnevin. In point of size, it is the most distinct of the Nuphars cultivated there, and is worthy of inclusion where collections of water plants are grown.

The leaves are large, mostly held somewhat above the surface of the water, on stout stalks. Most striking, however, are the flowers: large in size, the outer sepals greenish yellow and the inner deeper, with reddish shading, while the petals are reddish brown; the large central stigma is very prominent.

The plant at Glasnevin has been in the pond for many years, showing little disposition to spread, and is only now making offsets.

Other species grown at Glasnevin in addition to the above are *N. macrophyllum*, *N. minimum*, *N. intermedium*, *N. japonicum*, *N. juranum*, and the common *N. luteum*.

Notes from my Rock Garden.

CAMPANULA AND DIANTHUS.

AUGUST finds only here and there a blossom on the various lovely patches that have kept the Rock Garden gay in past months, and it is a wise gardener who has, like myself, planted many varieties of Campanula and Dianthus. Of course a general tidying up should now be done, all ripe seeds sown if required, and every withered stalk and bloom cut off, all surplus growth cut back, and the rich greens, the greyish, variegated or silvery plants, such as the lovely varieties of Artemesias, will make pleasing patches amongst the Campanulas and Dianthi. Most plants will bloom again more or less after the dead flowers have been removed, so it is well to try to prolong the blooming period when possible.

Ajuga grandiflora is one that keeps sending up its gentian-blue spikes if cut back, and many Campanulas will continue well into October if thus treated.

Campanula muralis is now great masses of wide violet bells, as are also *Bavarica* and *portenschlagiana* in the larger forms, and certainly no

rock garden should be without one or more of its varieties. It blooms all through the summer. Miss Willmott is equally desirable and recently sent out. It is a lovely pale, silvery blue carpeter slightly larger than the old white or mauve pusilla; of easy culture and very floriferous, it forms masses of pretty nodding bells on wiry stems.

C. garganica hirsuta, faint lilac and star-like, requires in all its varieties a dry position; damp is fatal, and it likes to grow between large stones.

C. G. F. Wilson, dark blue, wide bells, very dwarf and interesting. *Haylodgensis*, with lovely clear, waxy bells and yellowish foliage. *Kelway's* new Dwarf Blue, like a larger Miss Willmott, and *Sutton's Giant Blue* amongst the larger varieties, will be allowed to live by slugs, but alas! the utmost protection against slugs, as I know to my cost, must be used if the following beautiful varieties are to be grown, otherwise they are very vigorous:—*Isobel*, flat, mauve, large blooms; *White Star*, best white *Campanula*; *pulla*, deep violet; *pulloides*, much darker and larger blooms on very short stems; a very choice one, well worth struggling for, as, indeed, the others are also.

There are many more beautiful *Campanulas*, but there are considerable difficulties in dealing with them. This will not deter me from having another try. *C. barbata*, not dwarf, but suitable for rock work; *C. abietina* requires constant propagation by seeds or off-shoots, as do some others. There are various difficulties; some like lime and others hate it, such as *C. Allionii*. Many only do grown from seeds. *C. barbata* will die after flowering unless grown in a very well-drained stony soil. Its still more beautiful miniature, *C. alpina*, is best from seed and thrives in light limy loam in an open place. These fascinating plants form a most interesting collection. During August *Platycodon Mariæ*, blue or white, comes into bloom. Its puffed out, balloon, or Chinese lantern-like buds are showing well and the flowers, though of short duration, are most desirable. *Symphandra pendula* belongs to the *Campanula* family and is of very rapid growth, but slugs are very partial to it, so that special care should be taken if its interesting bells, like green glass, are to appear.

Dianthus alpinus is very universally the first favourite amongst Rock Pinks; limy loam and moraine suit it best; its very large, deep-rose flowers, on short stems, rise from masses of dwarf evergreen foliage.

D. neglectus is now in great beauty, and certainly it is a very choice one, bright carmine, slightly buff-tinted on the reverse.

D. deltoides and *D. graniticus* are very useful; the latter is almost imperceptibly the nicer and comes easily from seed; *deltoides alba* should be grown to make a contrast, and all are very easy.

Double Pinks for rock work I rather avoid, though I have the magnificent border Pinks, *Gloria* and *Anne Boleyn* for some time, but there are so many single hybrids fringed, or with central markings, some of faint *Malmaison* Carnation tint, sweet and waxy, that except for a few of the easy double varieties, I do not trouble to have them in quantity.

D. Lady Catherine is a very beautiful single of faintest pink, grown by a titled lady now celebrated for her rock plants.

Though we depend very largely, and wisely so, on substantial clumps of *Dianthus* and *Campanula* in

our rock gardens, yet we need not imagine that without them we shall find a verdant waste, because dense bushes of Barr's dwarf Lavender come in delightfully, and the numerous suitable *Pentstemons*, such as *P. Glaber alpinus*, *P. diffusus*, *P. heterophyllus*, and the golden sheets of *Coronilla Iberica* mingling with masses of pinks or carmine *Sedums*, but undoubtedly we cannot afford to do without *Dianthus* and *Campanula* in variety.

Some Indigenous Plants worth Growing.

Owing to the introduction of so many beautiful plants from China, Thibet and elsewhere within the last few years there is a tendency towards neglecting the gems of our own mountains and bogs, which, as regards intrinsic beauty, can hold their own against all comers. Such is our perverted taste that a dingy weed from Yunnan or Szechuan is wondered at, and admired and fussed over, and sold at an inflated price, while our native plants are left to "waste their freshness on the desert air."

It is a characteristic of human nature to worship variety and to rejoice in the possession of that which others have not got. This trait did not escape the notice of Alphonse Karr, still delightful in his good humoured ridicule of our idiosyncrasies. I hope that on the score of aptness I may be excused for quoting from such a classic as his "Tour round my Garden."

"There are in our gardens, and among those who pretend to love them, good sorts of folks who are a little like you, my friend. Their estimation of a flower rises in proportion with its variety and the distance from which it has been brought. I have often met with these curiosity seekers and amateurs, people who find in possession no other pleasure but that despicable one of knowing that others do not possess—people who have flowers, not for the sake of looking at them, but showing them."

By all means let us grow rare exotics in our gardens if we can get and grow them. If we cannot visit Thibet and see the plants "in situ," the rational thing to do is to grow them in our gardens so that we may see, smell and enjoy that which we would otherwise be unable to. But let, at least, a small corner be reserved for our own beautiful wildlings.

Our indigenous beauties are not as few as might be supposed. Quite an extensive garden could be furnished fully and beautifully with native plants; not what is commonly known as weeds but many difficult and by no means common species.

Gentiana verna, of course, heads the list. A native of our western shores and mountains, it is among the first half dozen most beautiful rock plants. Its cultivation is by no means easy, but anyone who has failed with it should not give up until they have tried the Lissadell suggestion to grow it in raised peat. *Dryas octopetala* is another beauty which should be grown by all. The dainty *Anemone*-like flowers are set off to perfection by the beautiful green of the little oak-like leaves, and after the flowers come ornamental fluffy heads of seed which keep the plant beautiful till late in the year. It flourishes in a limestone moraine. A near companion to the Mountain

Avens in my garden is *Silene acaulis*, which, although considered difficult, thrives perfectly in the same soil (if I may call it so) as the *Dryas*.

Among the *Saxifrages* we get several interesting plants. Our mountains furnish us with many varieties of the mossy type. Among these *S. rosacea* and *S. Sternbergii* stand out, the former on account of its neat habit, grey foliage and the length of time it remains in bloom; the latter on account of its beautiful green cushions and pure flowers. No garden is complete without *S. oppositifolia* with its large purple flowers and creeping tufts. It is quite at home in a sunny, slanting spot in the limestone moraine as on our mountain tops. *Saxifrages Hirculus*, *stellaris*, *izoides*, are all attractive. They can all do with a stony, sopping, boggy spot. The Irish variety of *London Pride* should be grown. It is differentiated from the common Pyrenean form by its more beautiful, dentated leaves. *Saxifraga Geum* is another easy, beautiful plant. The annual *S. tridactylites* is quite interesting.

It will be seen that with our native *Saxifrages* alone anyone could make a very enjoyable little garden. Few of the species are fastidious, and if their wants are studied there is no reason why all could not be grown.

Other genera give us one or two species each. *Pinguicula grandiflora* is a lovely thing, and will flower well if it is kept sufficiently damp. The *Wood Anemone* in its blue form is exceedingly beautiful and worth the best position you can give it. The *Pyrolas* are delightful, too, if you can grow them. I have seen *Pyrola minor* flourishing in the garden, growing out of a carpet of *Silthoropia*.

Among the heaths there are many indispensable plants; few of the white varieties can be well done without. *Ericas Mackayii* and *Mediterranea* are fine. The most beautiful of all is, perhaps, *Menziesia polifolia*, with its little bells just like fairy footballs, as Miss Jekyll says. The white variety is as delightful a small shrub as might be desired. *Empetrum nigrum*, which I collected on the summit of Slieve Donard, is a valuable little carpeting shrub with dainty leaves and flowers, followed by black berries.

Talking of dwarf shrubs, *Potentilla fruticosa* is one of the best small flowering shrubs obtainable. It grows in the West of Ireland, locally abundant where it occurs. Another very elegant little tree is *Juniperus nana*, the dwarf juniper, found wild on many of our mountains, but by no means common. It forms a spreading mass of somewhat glaucous branches, seldom rising more than four inches above the surface of the ground. It is not difficult to grow.

Space forbids more than a mere mention of other fine plants. The *Har-bell*, especially in the large and white forms, is well worth growing. *Campanula rapunculoides* is a beautiful, terrible weed. The *Bog Pimpernel* is so beautiful that Ruskin spent hours sitting on a stone admiring it. The *Geraniums* give us some plants more respectable than refined. Rare *sylvaticum* and *sanguineum* are quite good, but far surpassed by *Launcestris*.

The *Helianthemums*, especially *vincale*, are fine. *Euphorbia Hiberna*, *Sedums acre*, *album*, *anglicum* and *rupestre*, *Valerian*, *Welsh Poppy*, *Wild Thyme* and its varieties, many *Orchids*, *Glaucium*, *House-leek*, some *Violets*, are just a few beautiful common plants picked haphazardly. They will suggest further species which space prevents me from enumerating.

If we permit ourselves English wild plants our range is still wider. *Primula farinosa*, *Cypripedium Calceolus*, *Dianthus deltoides*—these head the list with many other fine plants to follow. It must not be imagined that I countenance the uprooting of rare plants to bring home to the garden. No one is more to be despised than the man who helps to destroy our flora. With many of our commoner plants no harm is done by removing a root or two, but in the case of rare plants, seed only should be collected. It should be the aim of every gardener to protect and, if possible, increase our flora. It is perfectly legitimate for a gardener to raise a stock of a rare indigenous species, and place a few plants in its haunts. By bringing together a collection of our more beautiful plants we awaken appreciative interest in those who see them, and enable invalids and others unable to hunt down the species themselves to enjoy them. Not the least part of the enjoyment of this kind of gardening is the pleasure of collecting and exchanging specimens, for every plant awakens memories of some pleasant tramp over the hills, or some enthusiastic bygone friends.

E. A. A.

A Horticultural Journey.

IN Ireland we suffer so much from wind and all too little sun that it has always been a great pleasure to see gardens as they are in the more favoured calm and sun of Southern England. We do not suppose anyone will dispute that Ireland is at a disadvantage in regard to wind. Blow! blow! seems to be our lot, although in point of winter mildness we can beat the sister country, and, in our maritime counties, can cultivate to perfection numerous shrubs and plants which do not winter without protection even in the mildest parts of England. In exceptionally sultry weather we have found Kew scarce worth visiting so far as flowers are concerned, but in pleasant summer days what a contrast it presents to Hibernian gardens. The *Roses* and flower beds revel in the genial warmth and calm balmy airs, and a walk down the broad, grass-covered avenues in July, with long lines of fragrant *Limes* on either side is something to remember.

With a healthy horticultural appetite we reached London at the end of June, but the long continued drought following the lean years consequent on the war well nigh destroyed for the time being most of what we had come to see. The big nurseries, which formerly were weedless, are a sad sight, and everywhere we had further evidence of the famine in *Roses* and fruit trees. The shortage of the former is important, but in the case of fruit trees it is serious, as fruit is an indispensable part of the food of the country. Of course the war has wrought havoc in every garden and we were careful to preserve happier memories of familiar beauty spots like Hampton Court by reserving our next visit for a future time.

Flower shows are unsatisfying at the best. The National Rose Show, the R. H. S. Fortnightly Meeting and Sweet Pea Show, and the bigger affair at Chelsea on St. Dunstan's Day, all failed to afford much pleasure, but we happily kept till the last our visit to Munstead Wood, the well-known home of Miss Gertrude Jekyll, V.M.H. Having heard so much about it we alighted at Godalming Station with lively anticipation and,

on reaching Miss Jekyll's garden, found a treat in store. Wandering through the grass-and-heather woodland walks all our cares fell away. The war-worn streets of London and even the interminable reminders of the "Victory Loan" were forgotten, and there was no necessity for the vulgarity of a lettered announcement found in many other gardens to tell us that "God walks" in Miss Jekyll's woodland garden. Welcomed and entertained by the charming lady herself, we spent a delightful afternoon, and, although informed that the garden is sadly let down from its former state, we rejoiced that even a world war could not destroy the beauty of so natural a place. The house, designed by Sir Edward Luytens and built of the stone of the country, is situated on the edge of the wood, and although the flower gardens contain much of interest we found the wood itself the most charm-

The soil consists chiefly of sand, so that for garden purposes other ingredients have to be brought in. Miss Jekyll told us that Tea and Hybrid Tea Roses do not succeed, but the Ramblers assuredly flourish, and a few which have possessed themselves of tall crab trees were a beautiful sight at the date of our visit.

J. M. W.

Popular Flowers.

DELPHINIUMS.

MESSRS. WATSON, Clontarf Nurseries, Dublin, have favoured us with a collection of cut spikes of Delphiniums illustrative of the wonderful advance made in these handsome plants of late years.

Messrs. Watson make a speciality of Delphiniums, growing the best of the new varieties, and the pick of the older sorts, some of which are not yet outclassed.



RHODODENDRONS AT DRUMBRAE, BANTRY, CO. CORK.

ing. It must be exceptionally so when the Azaleas are in bloom. In the underwood Whortleberries are abundant. Large colonies of Lily of the Valley, Gum Cistus, Andromedas, Pernettyas, Ericas, Daboecias, and kindred plants and shrubs have been naturalised, and one returns to the open under a dense canopy of bamboos. Below the stone-terraced approach to the house we entered the Nut Walk, which we recognised at once from the illustration which appeared in *The Garden* some months ago. Passing under the pine-covered pergola we entered the flower gardens, which are sheltered by flourishing hedges of Yew, Cypressus Lawsoniana and Hornbeam. Here Rambler Roses and the Roses of long ago were beautiful. Carried from pillar to pillar La Guirlande showed to advantage; Zephyrine Drouhin was there in all its sweetness, and numerous other old-fashioned Roses captivated one by their beauty and fragrance. The autumnal borders were responding to the recent rains, and the Munstead Dwarf Lavender was in its full beauty; there is no Lavender to equal it.

The following were received:—

D. Carnegie, a tall strong grower of fine appearance, the outer petals of sky-blue, the inner soft rosy mauve, centre blue with white eye; the flowers are over two inches across.

D. Harry Smetham, a first rate grower producing large spikes bearing finely formed flowers semi-double, of a clear porcelain blue.

D. Lavanda, one of the newest sorts, producing enormous spikes of very large semi-double flowers, deep rosy-lavender in colour.

D. Legionaire, a particularly handsome variety raised by Messrs. Lemoine of Nancy; spikes very large and handsome, flowers deep gentian blue.

D. Queen Mary, a beautiful sort, of an exquisite silvery nemophila blue with sulphur centre.

D. The Rev. Lascelles, an older variety but still indispensable; good spikes bearing flowers of a rich, deep, royal blue with a large white centre.

D. Sergeant Beranger bears enormous flowers, clear mauve margined blue, each with a dense black eye.

D. Smoke of War, quite new, as the name be-

tokens, and quite original in colour, deep reddish-purple and violet with a large black centre.

D. Yvette Guilbert, sent out some years ago, but one of the loveliest of the light blues; flowers single, large, and of the most charming pale blue.

D. Zruster Lugten, a magnificent dark-coloured variety, very effective, of the richest Oxford blue with plum centre.

Rhododendrons at Drumbrae.

THE photograph reproduced in our present issue depicts a beautiful garden scene at Drumbrae, Bantry, Co. Cork, the residence of Mr. A. B. B. Wilkinson. The luxuriance with which many rare and beautiful plants grow in the mild climate of that district is well known. Mr. Wilkinson, in sending the photos, remarks:—"I enclose photo . . . of hybrid Rhododendrons and one of R. Falconeri 12 feet high. The flowers are of great size, many of the trusses being 9 inches in diameter. Another Falconeri here had 123 trusses of flowers last year. Aucklandi hybrid is just out of flower and proves quite hardy here; it is a freer flowerer than true Aucklandi, which also grows well in the open.

"Myosotideum nobile flourishes here. One large plant had five spikes of flowers this season. They grow in soil composed half of Bantry coral sand and half top soil from a meadow. Parochetus communis, planted last autumn, flowered profusely and now covers several square yards of ground."

Trial of Strawberries at Wisley.

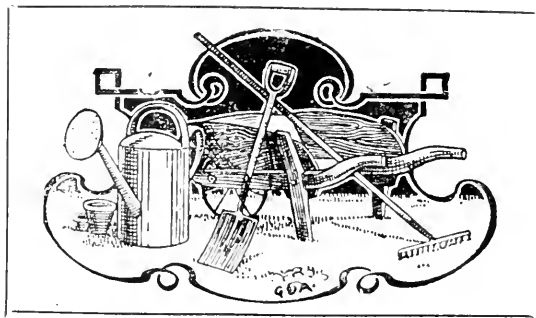
THE Royal Horticultural Society will carry out a trial of Strawberries (outdoors) during the coming season in their gardens at Wisley. They hope to include as many varieties as possible in this trial and would be glad if growers would send twenty plants of each variety to be tried so as to reach the Director, R.H.S. Gardens, Wisley, Ripley, Surrey (L. & S. W. Ry., Horsley), not later than August 16.

NOTICE

READERS are invited to submit questions bearing on gardening in any of its branches. It is our desire to stimulate and encourage gardening in Ireland, and we are in touch with experts who will be glad to give every assistance.

We are always open to consider articles, and would be glad to receive photographs—of gardens or plants—for publication, if suitable; senders will oblige by stating whether payment is desired in the event of publication.

Contributions should reach the Editor not later than the 15th of each month.



Allotments.

COMPETITIONS AND SHOWS.—The annual show for allotment holders has done a good deal to raise the standard of growing vegetables on allotments. In many cases, however, a good deal remains to be done in the arrangement of vegetables on the exhibition table. With the suspension of the regular horticultural shows in many places allotment holders have not had the opportunity to observe what the professional and more experienced cultivator is capable of doing. Cabbages for exhibition should be fresh, with firm hearts of medium size, and the exhibit should be uniform. Cauliflowers should be perfectly white and clean and impress a judge with their freshness and solidity. Potatoes should be free from disease, the skins clear, fresh and clean, and the tubers all of the same size. Many of the coloured Potatoes have deep eyes and should always be in a class by themselves but failing this they are seldom able to compete with white Potatoes, which have a smooth appearance and are free from deep eyes. Peas should be well filled; large pods of a deep green colour. Condition and quality are also important. In the case of Onions, the shape depends on the variety shown, but the neck should be small; size and firmness is essential. Leeks should be well blanched, with the stems long and thick. Kidney and Runner Beans are often shown too large. The Beans should be brittle and clear and all the pods should be of uniform length and form. Long stringy Beet would never have a chance with an exhibit of good quality and colour. Carrots will differ in size and shape according to the variety grown, but the skin and colour should be clear and bright, and free from side roots. Exhibition Celery is often a difficult problem for allotment holders. The heads should be of good size, clean, well blanched and solid. Parsnips should taper evenly, of moderate length and smooth skin. In the case of Rhubarb, colour, freshness and size is important. Separate classes should be given so as not to include white and yellow Turnips with the garden Swede. Coarse roots are to be avoided. Vegetable Marrows should be of fair size, nicely shaped and tender. The colour will depend on the variety grown. Parsley and other herbs when shown in a collection should be tied in neat bunches.

SEED SOWING.—Seeds should be sown towards the end of the month, of Cabbages, to provide supplies next spring. Useful kinds for sowing in autumn are Flower of Spring, Ellam's Early, First and Best and Early Offenham. We find Flower of Spring is a reliable variety and seldom or never goes to seed with us when sown about the 25th of the month. In cold situations the seed might

be sown earlier. Seeds may be sown broadcast or in drills. If the weather is hot and dry dig the soil over and make it firm. It is often an advantage to place a few leafy branches over the seed bed. As a precaution against club-root apply lime to the soil before sowing. Cauliflowers may also be sown; in cold districts young plants require the protection of a frame in winter. Onions sown in autumn usually escape the attacks of the Onion grub. The chief sowing, however, of the silver-skinned varieties is always made in August. The seeds should be sown in drills, then the plants can be thinned out in spring or the whole crop used. The seeds may be sown one inch deep; the extra depth will prevent frost forcing the young plants out of the ground. Make the seed bed firm. We make a special sowing of Lettuce in the autumn and find that the variety "Winter Pearl" is magnificent for standing the winter, and produces firm heads for cutting at the end of April and during May.

TRANSPLANTING.—Finish transplanting Broccoli, Sprouts, &c., as soon as possible. The late crop of Leeks should also be planted (see last month's Notes for directions on planting).

GENERAL WORK.—As soon as the foliage of early Potatoes and also that of the second early varieties dies down, lift the crop. If disease is present all doubtful tubers should be used for cooking before decay sets in. Celery should be earthed up as growth continues. Before earthing remove all suckers and side shoots. When placing the soil hold the plants firmly, or better still, tie them up loosely with raffia to prevent soil from reaching the centre of the plant. When crops are removed dig the soil deeply. Wet weather and short days may prevent this later, and good digging now may save a lot of trouble later. The tops of Onions should be bent over as the foliage begins to wither. This causes the bulbs to swell. A slight twist at the neck is sufficient.

FLOWER BORDER.—Cuttings of Geraniums when put in early have a much better chance of keeping through the winter than those put in later. Choose firm short-jointed shoots and insert them in sandy soil. Cuttings of Violas, Pinks and some of the herbaceous plants should also be taken. The seed of Sweet Peas is so cheap that it is not worth time saving seed, so the seed pods should be picked off and the plants will continue longer in flower. Dahlias and other tall growing plants will require staking. Occasional applications of liquid manure will be beneficial. Seedling plants of Wallflowers and other seeds sown in June may be transplanted as soon as they are large enough and before they become overcrowded in the seed beds. Seeds may be sown this month of *Myosotis*, *Limnanthes*, *Nemophila* and *Alyssum*, if required. The flower border is often neglected on the allotment but it should now have attention, giving water where necessary. Cut off dead flower stalks and hoe between the plants to keep weeds down. Hoeing also gives the border a fresh appearance and adds to its attractiveness, and if the plot is edged with grass keep the edges trimmed. G. H. O

Onion Stirling Exhibition.

THIS is one of the very best of the large-bulbed varieties and is yearly becoming more popular. To obtain handsome specimens for exhibition in August and September seeds should be sown in a frame in January or early February, planting out in well cultivated ground in April.

The Month's Work.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon. The Earl of Bessborough, K.P., Bessborough, County Kilkenny.

THE FLOWER GARDEN.

FLOWER beds and herbaceous borders will now be at their best, and nothing should be allowed to detract from their appearance. All dead flower spikes and leaves should be removed at frequent intervals, and the soil between the plants should be frequently hoed to keep down weeds, and to keep the plants growing.

Dahlias will now be growing strongly, and will require adequate support. Three stakes will be necessary for old plants, but for young plants of the present season one good stick should suffice. Michaelmas Daisies also will now need further attention. The growths of these should be staked out separately so that they will look natural and graceful when in flower, but at the same time they must be made secure against autumnal storms.

Plants in tubs and vases will now require plentiful supplies of water. They should be fed occasionally with liquid manure, or a sprinkling of Clay's Fertiliser well watered in.

Pentstemons give a glorious display at this season, and they are very little trouble to grow. Cuttings taken at the end of this month will root readily in a cold frame, where they will pass the winter quite safely. To get the best results they should be planted out in well manured ground in April, and kept well watered and frequently hoed during the growing season. Rambler Roses that have finished flowering may now be partially pruned, removing all dead flower heads and the older growths, and training in loosely the long growths of the current season, which will furnish next season's display of flowers.

Wallflowers and Forget-me-Nots should now be transplanted from the seed-beds into rather poor ground, where they will make sturdy plants for planting out in the autumn. Bulbs for autumn planting should be ordered now to ensure having them to hand when planting time arrives.

THE FRUIT GARDEN.

Early varieties of Apples and Pears should be closely watched and gathered as soon as ready. Amongst Apples, Mr. Gladstone, Irish Peach, Beauty of Bath, and the newer Langley Pippin, will be ripening. These are best gathered a few at a time as they ripen, as they do not improve by storing. Peaches and Apricots on walls must also be looked over at frequent intervals and gathered as they ripen. Cooking Plums, such as Riner's Early, Early Orleans, and Czar should be picked when ripe and used or otherwise disposed of. Dessert Plums for August include Oullin's Golden—a large, handsome variety—Denniston's Superb—of delicious flavour—and Early Transparent Gage. All fruit should be perfectly dry when picked, and great care should be taken in handling the more delicate kinds.

Continue the summer pruning of Apples and Pears, and, if possible, complete this operation during August. The trees will then get the full

benefit of September's sunshine to ripen and mature next season's fruit buds.

Wall trees carrying heavy crops should be well supplied with water and liquid manure, but the use of the latter should be discontinued as the fruit ripens, and until it is all gathered, after which its use may be resumed in the case of trees that are not growing strongly or those that have been exhausted by carrying a heavy crop.

Raspberry plantations should receive attention as soon as the crop is cleared. Cut out all the old canes that have fruited, and thin out the new ones to the number required for furnishing the rows for next season. Afterwards hoe the ground over lightly and remove all weeds and rubbish. Where new fruit plantations are to be made the trees should be ordered with as little delay as possible. In all cases due regard should be had as to the varieties that succeed best in the locality. New varieties should be tried by planting two or three specimens in a reserve garden before they are used extensively in orchard planting.

THE VEGETABLE GARDEN.

All ground falling vacant may be filled up with Coleworts; and Leeks, too, may still be planted if young plants are available.

Lettuces and Endive should be thinned and transplanted as soon as they are large enough to handle, and a further sowing of both may still be made for the provisioning of winter Salad. A good breadth of Turnips may now be sown to be left in the ground all winter. These can be pulled as required for use, and any left over in the spring will provide Turnip greens, where these are appreciated. About the middle of the month sow Spinach—either prickly or round-seeded will do—to stand the winter and furnish young leaves for use in the spring.

Tripoli Onions should be sown towards the end of the month; if sown earlier they make larger plants before winter, but a great proportion of these will run into flower next season. Brown Cos Lettuce may also be sown about this time for spring use, also a good hardy Cabbage variety, such as Commodore Nutt. An excellent Lettuce for this sowing, which unites the good qualities of both types, is Sutton's Little Gem.

Keep the hoe going constantly amongst Brussels Sprouts, Broccoli and all winter greens, to encourage growth and keep down weeds.

Early Celery should be earthed slightly at fortnightly intervals, applying a good soaking of water to the plants before each earthing.

The main crop of Onions should be harvested towards the end of the month. A fortnight previous to pulling them the stems should be bent down. After pulling the bulbs they must be laid out in a sunny position and thoroughly ripened off before storing in a cool, airy shed for the winter.

The Royal Horticultural and Arboricultural Society of Ireland.

AUTUMN EXHIBITION AT BALLSBRIDGE.

HELD in conjunction with the Royal Dublin Society's Horse Show, this was a most successful exhibition and was remarkable for the fine display of hardy herbaceous plants, flowering and foliage shrubs.

In the Arboricultural section the most outstanding feature was a collection of fruiting

branches of coniferous trees shown by Lord Powercourt.

Owing to the settlement of the dispute in the printing trade and the pressing necessity of resuming the publication of IRISH GARDENING at the earliest moment we regret being unable to comment more fully on the numerous fine exhibits. The Irish Nursery Trade is to be very highly commended for coming out in such force and with such a wealth of rare and beautiful flowers and plants. Below we give the prize list:—

GROUPS AND COLLECTIONS.

Champion Class, Group Foliage, Flowering and Decorative Plants, and Cut Flowers.—1, Charles Ramsay & Sons, Ballsbridge.

Group Foliage, Flowering and Decorative Plants and Cut Flowers.—1, Sir Stanley Cochrane, Bart., Woodbrook (gardener, Mr. Power); 2, Major Kelly, Montrose, Donnybrook (gardener, Mr. MacDermott); 3, Edward Lee, Blackrock (gardener, Mr. O'Connor).

Group Hardy Flowering, Ornamental Shrubs, Trees and Plants, Silver Cup presented by the President, Marquis of Headfort, with first prize.—1, Donard Nursery Co., Newcastle, Co. Down; 2, G. N. Smith, Daisy Hill Nurseries, Newry; 3, Marquis of Headfort, Kells (gardener, Mr. Trevithick).

Group Hardy Flowering Ornamental Shrubs, Trees and Plants.—1, Mrs. Stephenson, Cranford, Stillorgan (gardener, Mr. Buggie).

Collection Hardy Cut Flowers.—1 and Silver Cup presented by the R.H.S.I., Mrs. Mitchell, Ardlin, Blackrock (gardener, Mr. Baker); 2, Captain L. Riall, Old Conna Hill, Bray (gardener, Mr. Webster); 3, Captain Daly, Templeogue House (gardener, Mr. Murtagh).

Hardy Cut Flowers (12 vases, 12 distinct varieties).—1, Mrs. Williams, Prospect, Sallins (gardener, Mr. Cullen); 2, Mr. Justice Wylie, The Elms, Blackrock (gardener, Mr. Taylor).

Group of Roses (space not exceeding 12 ft. by 4 ft.).—1, Captain Daly; 2, Miss Osborne, Cowslip Lodge.

Group of Roses (space not exceeding 6 ft. by 4 ft.).—1, G. C. Stapleton, Wyvern, Killiney.

Basket Roses (for ladies only).—1, Miss Kelly, Montrose, Donnybrook.

CONFINED TO THE TRADE.

Stand of Roses (72 blooms).—1, Hugh Dickson, Belfast (gold medal).

Stand New Roses (12 blooms).—1, Hugh Dickson (gold medal).

Stand Roses (12 blooms, distinct varieties).—1, Hugh Dickson (gold medal).

Group Roses (arranged for effect).—1, Hugh Dickson.

DAHLIAS.

Dahlias, Cactus, 24 blooms, for Lord Ardilaun's Challenge Cup.—Won by Major H. Stubber.

Dahlias, Cactus (6 vases).—1, Major H. Stubber. Decorative Dahlias.—2, Miss Cunningham.

BEGONIAS.

Double Tuberous Begonias.—1, Mrs. Toner; 2, Major H. Stubber.

Antirrhinums.—1, Major H. Stubber; 2, Howard Guinness; 3, Mrs. Tisdall.

GLADIOLI.

Gladioli (stand 18 varieties, for Challenge Cup presented by F. V. Westby, D.L.).—Won by Lord Carew.

Gladioli (stand 12 varieties).—1, Major H. Stubber; 2, Rev. J. J. Griffin.
 Collection Annuals.—F. V. Westby, D.L.
 Carnations or Picotees (12 vases).—1, G. C. Stapleton.
 Carnations or Picotees (6 vases).—1, Edward Kelly; 2, N. T. Harris.

SWEET PEAS.

Champion Class, collection 18 bunches for Challenge Cup presented by Mrs. R. B. Moloney.—Won by Viscount Powerscourt; 2, J. Hennerty; 3, Miss Osborne.
 Sweet Peas (12 bunches).—1, Viscount Powerscourt; 2, J. Hennerty; 3, Major Stubber.
 Sweet Peas (6 bunches).—1, R. F. Cruise, Rathmoyle; 2, Rev. J. J. Griffin.
 Basket Sweet Peas (for ladies only).—1, no award; 2, Miss Kelly, Montrose.

FRUIT.

White Grapes.—1 Sir Stanley Cochrane; 2, Lady Howard Bury; 3, F. V. Westby.
 Black Hamburg Grapes.—1, Lady Bury; 2, Mr. Justice Wylie; 3, F. V. Westby.
 Black Grapes any other variety.—1, F. V. Westby; 2, H. M. Beddington; 3, Mr. Justice Wylie.
 Peaches.—1, Lady Bury; 2, Mr. Justice Wylie; 3, Major H. Stubber.
 Nectarines.—1, Lady Bury; 2, Marquis of Ormonde; 3, Marquis of Headfort.
 Melon.—1, Marquis of Ormonde; 2, Howard Guinness.
 Collection of 6 Dishes Apples.—1, John Hennerty; 2, Marquis of Ormonde; 3, Major H. Stubber.
 Apples (Dessert), Beauty of Bath.—1, Lady Bury; 2, A. Claud Ellis; 3, Mrs. Leet.
 Apples, Irish Peach.—1, Marquis of Headfort; 2, Captain Lewis Riall; 3, Mr. Justice Wylie.
 Apples, Ripe, any other variety.—1, Marquis of Ormonde; 2, Lady Bury; 3, H. M. Reddington.
 Apples (Woking), Lord Grosvenor.—1 F. V. Westby; 2 Captain R. H. Fowler; 3, Sir Stanley Cochrane.
 Apples, Early Victoria.—1 A. Claud Ellis; 2, J. G. Geoghegan; 3, Marquis of Ormonde.
 Apples, Echlinville Seedling.—1, H. M. Beddington; 2, Marquis of Headfort; 3, Captain Lewis Riall.
 Apples, Grenadier.—1, A. Claud Ellis; 2, Sir T. W. Russell; 3, Mrs. Williams.
 Apples any other Variety.—1, Lady Bury; 2, Major Kelly; 3, Miss Cunningham.
 Pears.—1, Marquis of Headfort; 2, Marquis of Ormonde; 3, Lady Bury.
 Red Plums.—1, Marquis of Ormonde; 2, G. C. Stapleton; 3, Miss Cunningham.
 Black or Purple Plums.—1, Marquis of Ormonde; 2, Captain Lewis Riall; 3, Sir Stanley Cochrane.
 Plums, any other Colour.—1, Marquis of Ormonde; 2, Captain Lewis Riall; 3, Sir Stanley Cochrane.
 Red Gooseberries.—1, Sir Stanley Cochrane; 2, Mrs. L. V. Toner; 3, G. C. Stapleton.
 Green Gooseberries.—1, G. C. Stapleton; 2, Mrs. Toner; 3, Marquis of Ormonde.
 Yellow Gooseberries.—1, G. C. Stapleton; 2, Major H. Stubber.
 Red Currants.—1, G. C. Stapleton; 2, Mrs. Tisdall; 3, Captain Riall.

White Currants.—1, H. M. Beddington; 2, G. C. Stapleton; 3, Captain Daly.
 Loganberries.—1, R. T. Harris, Saintbury, Killiney.
 Cherries.—1, Lady Bury; 2, Marquis of Headfort; 3, Major Kelly.
 Tomatoes.—1, Mrs. Toner; 2, Colonel R. Claude; 3, Major Hamilton.

VEGETABLES.

Cucumbers.—1, Colonel Claude Cane, St. Wolston, Celbridge; 2, Major Hamilton Stubber; 3, F. V. Westby, Roebuck Castle, Dundrum.
 French Beans.—1, Major H. Stubber; 2, Mr. Justice Wylie; 3, R. T. Harris, Saintbury, Killiney.
 Broad Beans.—1, Mrs. Tisdall, Charlesfort, Kells; 2, Howard Guinness, Chesterfield, Bootstown; 3, G. C. Stapleton.
 Cauliflowers.—1, Viscount Powerscourt, Enniskerry; 2, Major Kelly.
 Cabbage (Small).—1, Miss Cunningham, Trinity Hall, Donnybrook; 2, G. C. Stapleton; 3, Howard Guinness.
 Cabbage (Large).—1, Colonel Claude Cane; 2, Mr. Justice Wylie; 3, Miss Cunningham.
 Carrots.—1, Miss Tisdall, Charlesfort, Kells; 2, Major Kelly.
 Cabbage Lettuce.—1, Mother Agatha, Loreto Convent, Rathfarnham; 2, Howard Guinness; 3, Mr. Justice Wylie.
 Cos Lettuce.—1, G. C. Stapleton.
 Green Marrows.—1, Major Kelly; 2, H. M. Beddington, Ballyhooley; 3, Mr. Justice Wylie.
 White Marrows.—1, Major Kelly; 2, Mr. Justice Wylie; 3, Miss Cunningham.
 Onions.—1, Colonel Claude Cane; 2, Major H. Stubber; 3, Howard Guinness.
 Peas.—1, Colonel Claude Cane; 2, Mrs. Tisdall; 3, Major Kelly.
 Potatoes (Round).—1, Lady C. Howard Bury, Charleville, Tullamore; 2, F. V. Westby; 3, Major Kelly.
 Potatoes (other than Round).—1, Lady Howard Bury; 2, Mrs. Tisdall; 3, Sir T. W. Russell, Terenure.
 Parsley.—1, Colonel Claude Cane; 2, Miss Cunningham; 3, G. C. Stapleton.
 White Turnips.—1, Mother Agatha; 2, Major Kelly; 3, Miss Rothwell, Terenure.
 Yellow Turnips.—1, Viscount Powerscourt; 2, Rev. Mother Agatha.
 Collection of Vegetables (Champion Class).—1, Viscount Powerscourt; 2, John Hennerty, Boreenamana Road, Cork.
 Collection of Vegetables.—1, Captain Daly.
 Collection of Vegetables.—1, Mr. Justice Wylie; 2, Captain R. H. Fowler, Rahanston, Enfield; 3, Miss Rothwell.

PLOTHOLDERS' SECTION.

Champion Class—Collection 6 kinds of Vegetables.—1, J. E. G. Milner, 66 Haddington Road; 2, H. Tapley, 111 Rialto Cottages; 3, L. Mason, 69 Brighton Avenue, Rathgar; 4, F. Toner, Eblana Avenue, Kingstown.

Collection 4 kinds Vegetables.—1, W. Salmon, Junr., 2 Orwell Cottages, Rathgar; 2, N. Bergin, 3 Tivoli Terrace, Kingstown; 3, J. Carleton, Kimmage Road; 4, J. Hudson, Glashule.

Beet.—1, L. Mason; 2, H. Tapley; 3, F. Toner.

French Beans (Dwarf).—1, H. Tapley; 2, W. Brown, 15 Mountpleasant Parade, Ranelagh; 3, W. Duncan, 28 Caldwell Square, Kingstown.

Beans (Runner).—1, W. Alford, 9 Abercorn

Terrace, Harold's Cross; 2, F. Toner; 3, J. E. G. Milner.

Beans (Broad).—1, D. Smyth, 14 Tivoli Terrace, Kingstown; 2, F. Toner; 3. — Peat, 13 Brighton Square, Rathgar.

Cauliflowers.—1, R. Beegan, 2 Tivoli Terrace, Kingstown; 2, W. Salmon, Senr., 78 Upper Rathmines.

Cabbage (Small).—1, F. Toner; 2, L. Mason; 3, — Bates, Donnybrook.

Cabbage (Large).—1, W. Salmon, Senr.; 2. — Bates; 3, P. Corbally, 19 Haddington Road.

Carrots.—1, J. Carleton; 2, F. Toner; 3, J. Kavanagh, 17 Leeson Park Avenue.

Lettuce.—1, F. Toner; 2, W. Duncan, 28 Coldwell Street, Kingstown; 3, W. Alford.

Marrows.—1, F. Toner; 2, J. E. G. Milner; 3, — Peat.

Onions (White or Green).—1, B. Deegan; 2, D. Smyth; 3, F. Toner.

Onions (any other colour).—1, J. E. G. Milner; 2, J. Kavanagh; 3, R. Goff, Botanic Road, Glasnevin.

Peas.—1, L. Mason; 2, F. Toner; 3, J. Milner.

Potatoes (round).—1, Captain Daly, Templeogue House; 2, — Peat; 3, W. Salmon, Junr.

Potatoes (other than round).—1, W. Salmon, Junr.; 2, L. Mason; 3, H. Tapley.

Potatoes (boiled).—1, D. Smyth; 2, R. Latchford, 13 Gulistan Terrace, Rathmines; 3, J. Hudson.

Turnips.—1, W. Salmon, Senr.; 2, F. Toner; 3, L. Mason.

Forestry.

Specimens of Broad-leaved Timber grown in Ireland.—1, Viscount Powerscourt; 2, Sir Algernon Coote, H.M.L.

Specimens of Coniferous Timber.—1, Sir A. Coote; 2, Viscount Powerscourt.

Most interesting Exhibit, tending to promote or illustrate products of forestry.—1, Viscount Powerscourt; 2, Raheen Rural Industries, Scariff, Co. Clare.

Awards to the Trade.

General Stand.—V.h.c., St. Gatten's School of Gardening, Rathfarnham.

Collection of two and three years old Apple Trees, in fruit.—Silver Medal to Messrs. William Watson & Sons, Killiney Nurseries.

Display of Roses in various sections, including new Roses "Field-Marshal Sir Douglas Haig," "Lady Inchiquin," "Mrs. Hutchinson Swanton" (deliciously perfumed), and the wonderfully coloured "Sunstar"—Gold Medal and Certificate of Merit to Messrs. A. Dickson & Sons, Oakley Park, Blackrock, for above new Roses.

New Seedling Carnation.—Cultural Certificate to Mr. Edward Kelly, Rosebank, Kingstown.

Collection of Gladioli, comprising 80 varieties.—Silver Medal to S. A. Jones, Kilkenny.

Group of Shrubs and Collection of Hardy Flowers.—V.h.c. to Messrs. Pennick & Co., Nurseries, Delgany.

Floral Designs.—V.h.c. to Charles Ramsay & Sons.

Collection of Hardy Flowers and Shrubs.—Silver Medal to George N. Smith, Daisy Hill Nursery, Newry; V.h.c., Bradshaw's Artane Nurseries.

Collection of Gladioli.—Silver Medal to Hogg and Robertson, Dublin.

Obituary.

MR. THOMAS SMITH, V.M.H.

IN our last issue we alluded to the passing away of the founder of the far-famed Daisy Hill Nurseries.

Mr. Smith had reached the great age of 79 years, and was laid to rest in St. Patrick's Churchyard amidst every token of respect and regret.

Mr. Smith's career was one of marked success; connected with horticulture from his earliest years, he ultimately became famous throughout the world for his wonderful knowledge of plants, his exceptional skill in their cultivation, and for the marvellous collection he had gathered together at Daisy Hill.

The deceased first went to Newry as manager of a nursery, but soon realising the possibilities of plant-growing in Ireland, he determined to launch out on his own account. He chose a remarkably fine site, and beginning with a few fields in 1887, the nursery grew with amazing rapidity until now it approaches 70 acres in extent, clothing the fertile slopes above the town of Newry with what may be called a grand gallery of plants from many climes. Daisy Hill Nursery is more than a commercial collection, for there are many fine permanent specimens, and days are required to examine the numerous plants to be found growing therein.

It is needless here to refer to the many expressions of praise which have been from time to time bestowed on the marvellous collections at Daisy Hill.

Eminent horticulturists and botanists from all over the world have visited Newry in quest of plants, and one and all have voiced the belief that nowhere else could such a comprehensive collection be found. For many years the Horticultural Shows throughout the country were adorned by the wonderful exhibits from Daisy Hill, and as late as October of last year a marvellous collection of autumn coloured leaves and fruits created a sensation at the Royal Horticultural Society's (Ireland) Show in Dublin, the exhibit winning a gold medal.

For his eminence in horticulture, Mr. Smith was in 1906 awarded the Victoria Medal of Honour, the highest award of the Royal Horticultural Society, and which is limited to 61 holders.

Public parks and private estates in many countries have been enriched from Daisy Hill, and the late proprietor was for many years regularly consulted as to the development and laying out of parks and gardens.

While sympathising with his family and friends we feel that to them it must be a source of extreme satisfaction to know that the end of a ripe age was peaceful, and that the deceased gentleman has left behind him a record of industry and achievement equalled by few.

The Lure of the West.

Looking Ahead.

THE Commissioner of the Board of Trade at Saskatoon states that more enquiries were received at his office in *one month* from Great Britain and Ireland regarding the Western Canadian opportunities than were received *during the year 1918*. He is of opinion that this is a forecast of the increased immigration to be witnessed in the near future when present shipping and passport difficulties have been removed.

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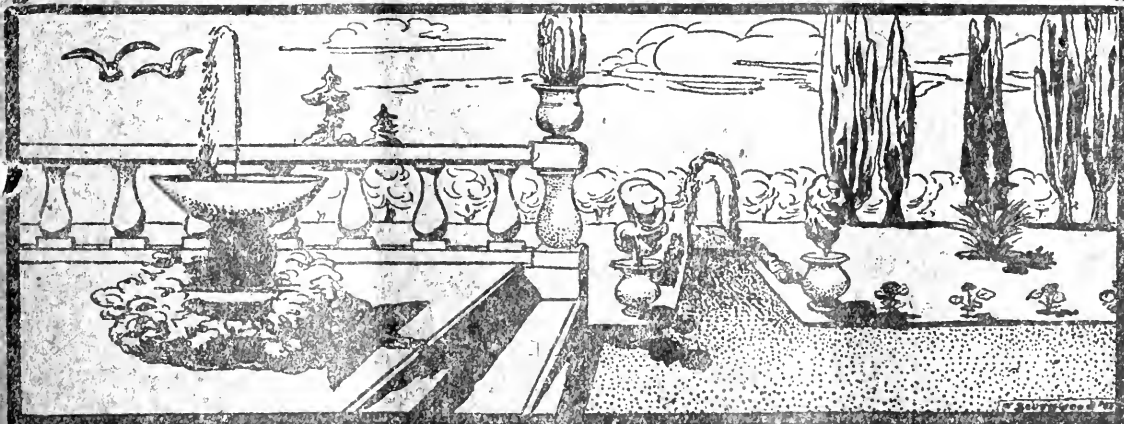
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Irish Gardening

Contents

	PAGE		PAGE
Foliage Plants	129	Reviews— <i>Con.</i>	
The Alpine Garden in June	136	Transactions of the Royal Scottish	
Bulb Planting (Illustrated)	137	Arbicultural Society.	140
Notes from the Rock Garden	138	The Flower and the Bee	141
<i>Lilium testaceum</i> (Illustrated)	138	Allotments	142
<i>Regelio-cyclus</i> Irises (Illustrated)	139	The Maid of the Mist— <i>Gladiolus</i>	
Haricot Beans	139	<i>primulinus</i>	142
"Guaranteed Gardening"	139	The Month's Work—	
Reviews—		Southern and Western Counties	143
The Kitchen Garden and its		Midland and Northern Counties	144
Management	140	Correspondence	144



The Vegetable Products Committee

IRISH BRANCH

President—The Most Noble the Marquis of Headfort.

Hon. Secretary—Sir Frederick W. Moore, M.R.I.A.

Hon. Treasurer—D. L. Ramsay, J.P.

With the recognition and approval of the Admiralty and the War Office the **VEGETABLE PRODUCTS COMMITTEE** has been formed under the presidency of **LORD CHARLES BERESFORD** for supplying Vegetables, Fruit, Jam, &c., to the **NORTH SEA FLEET**, in connection with which the **IRISH BRANCH** has been registered at the Head Offices, London, and through whom all enquiries respecting Ireland's contributions to the project should be made.

"The most ample expression of our thankfulness can never repay the debt which the people of these Islands owe to the gallant Officers and men of the Navy, who, by their ceaseless vigil on the danger-strown waters of the North Sea, are maintaining us in comparative peace and quiet."

The Committee of the Irish Branch appeal for help in maintaining, as far as possible, regular supplies to the **NAVAL BASE** allocated to them, both by Gifts of Vegetable Products and contributions of money to supplement the supplies by purchase in the Market. Such gifts are urgently required to keep up the supply during the trying winter months.

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Offices of the Royal Horticultural Society of Ireland
5 MOLESWORTH STREET, DUBLIN

IRISH GARDENING

VOLUME XIV
No. 163

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

SEPTEMBER
1919

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Foliage Plants.

By SIR JOHN ROSS OF BLADENSBURG.



AMONG the many and varied charms which well-grown and healthy plants display, a handsome leafage is by no means the least attractive feature they possess.

If we want to adorn our grounds with the best specimens we can find, we naturally search first for those that produce the most desirable flower; for when they assume their full holiday attire, our woods and shrubberies are then clothed in all the magnificence with which nature so lavishly endows them. Next, we may also select other specimens, perhaps on account of their conspicuous fruit or berry, exhibiting, as it were, another and a later holiday array, during which some of them even surpass the glories of their blooming period. Again, we often include others in our collections, because they turn to a brilliant autumnal tint and add colour to the landscape, forming a sort of farewell gift of the dying year, and something to remember when the sleep of winter lays our gardens to rest. All these fine and striking characteristics of the vegetable kingdom, and many more too numerous to be mentioned here, arrest our attention and claim our unbounded admiration. But the most constant and the most durable of them all is that which is created by the foliage; for from its earliest push in spring, in its adult stage, and until it falls in autumn, there is a rich luxuriance and a solid wealth of beauty to be seen that delight the eye and enhance the loveliness of the scenery. In this respect nature is in its best and happiest mood, displaying ever-varying changes of growth, infinite diversity of leaf, and never-ending shades of the prevailing green colour. The subject has a peculiar interest of its own, and it can never be overlooked. A few notes on it may not, therefore, be unacceptable. But we must first distinguish; for foliage plants, well-

known in greenhouses, are sometimes taken to be only those growing there, whose title to our regard depends rather on the colour and shape of their leaves than on the splendour of their flower—such, for instance, as some of the species of *Caladium*. The definition, however, seems to be hardly comprehensive enough. Not only are there many to be found with this quality fit for outdoor culture, but there are also not a few who combine with it a noteworthy bloom, and then their presence is all the more welcome for both these reasons.

The genus *Rhododendron* contains a series of numerous species, all resplendent in a gorgeous inflorescence, while the foliage of some is also to be commended. A few examples may be given. *Rh. Roylei* is a glaucous plant, contrasting well with the general tone of colour of its neighbours. *Rh. cinnabarinum*, of which it is held to be a variety, and *Rh. Thomsonii* have a somewhat like appearance. In the latter, the leaves are smooth, nearly round, some three inches in diameter, very neat, bluish above, with a glistening, almost white, underside, showing up the blood-red trusses. In *Rh. Falconeri* they are oval in shape, leathery in texture, and often a good deal more than a foot in length, bright green above, with a yellow buff tomentum beneath. In *Rh. eximium* they are nearly the same, rather rounder and slightly shorter, but with the curious peculiarity that, after flowering in April, the plant does not move till late in July, when it makes its new shoots. These are then covered with a brownish yellow tomentum that remains on both sides of the young leaves and growth until December, producing the illusion of a strange flower during the autumn. Something similar happens in the case of the true *Rh. ovatum*, where the spring pushes are bright purple. Both *Rh. Edgeworthii* and *Rh. lanatum* are provided with a

thick felt on the underside, the upper side of the former being glossy green and wrinkled, and of the latter dark and eventually smooth. *Rh. Hodgsonii* and *Rh. niveum*, moreover, show this characteristic, the felt being less dense and of different shades; while *Rh. grande*, *Rh. Kingianum*, and *Rh. Rollissonii* (*zeylanicum*)—the last two with peculiarly stiff leaves—are fine objects even when out of flower. Some of the Chinese kinds of recent introduction deserve notice, of which *Rh. argyrophyllum*, *Rh. calophyton*, *Rh. discolor*, *Rh. euanthum*, *Rh. lutescens*, *Rh. oreodoxa*, *Rh. oreotrephes*, *Rh. sutchuenense*, and *Rh. zaleucum* may be mentioned. *Rh. habrotrichum* has a hairy foliage, while all the branchlets are clothed with bright red bristles, a feature which is also to be seen in the Himalayan *Rh. barbatum*. In *Rh. fulvum* the underleaf and the young shoots are of a wonderful orange tint, the upperside smooth and a good green. This promises to be a very desirable species. But *Rh. sino-grande* is perhaps the most remarkable of the whole series, with enormous dark leaves, two feet and more in length and wide in proportion, and with a broad, pale yellow midrib. In spring and in the early summer, as they begin to develop, they are mottled brown and white, like a crocodile's skin, gradually turning through many intermediate shades to their normal colour. It is quite new to cultivation, and probably no one in this country has yet seen it in its perfection, but we can easily imagine what an addition it will make to our gardens.

The Composite Order embraces many plants of much interest. A bush of *Olearia macrodonta*, with dark grey undulate foliage, is always a welcome sight, especially when covered by masses of silvery white bunches of flower. *O. argophylla*, *O. avicenniæfolia*, *O. Forsteri*, *O. moschata*, and *O. virgata* may also be noted. *O. Traversii* grows to tree-like dimensions, with a rugged, light brown bark, and with shining leaves, silky white beneath, that show up well when stirred by the breeze. The white underleaf is also seen in *O. Lyallii*, a very handsome species, and in *O. insignis*. The latter is small, and is well adapted to rock work, dark leaves, more than nine inches in length; the whole of the young growth, including even the flower stalks, is covered by a thick woolly felt, and the plant then presents a beautiful combination of white and green. Somewhat the same underleaf characteristics are to be observed in species of the kindred genus *Senecio*—in *S. rotundifolia*, a sturdy and beautiful shrub from New Zealand, ten feet and more in height, with large round, highly-polished, leathery leaves; and in *S. Grayii*, *S. compacta*, and *S. Monroi*, which are spreading and smaller, and which are

crowned by rich golden bloom. *S. Buchananii* resembles *S. rotundifolia*, but the underleaf is tinged with yellow; it is probably hardier. *S. Hectori* is different; it forms a great bush with pale green foliage, cut into a few short pinnules or stipules at the base, and ending with a large terminal leaflet, one foot long and six to seven inches broad, serrated at the edges, and surmounted in summer by panicles of daisies two feet wide by one foot high, each flower nearly two inches across. *Brachyglottis repanda* merits a passing notice, even though it is somewhat tender and can hardly be grown everywhere; the leaves are slightly lobed, bright green above, one foot by six inches in size, midribs and veins purplish red and intensely white beneath. We might add to this list many *Artemisias*, most of them with feathery foliage, some of the *Achilleas* and *Celmisias*, *Diotis candidissima*, *Raoulia australis*, *Santolina Chamæcyparissus* (*incana*), *Senecio Cineraria*, *S. leucostachys*, and *Tanacetum Herderi* from Central Asia, all silvery grey of various shades, some almost white, and all suited to the Rock Garden. Nor should the *Cassias* be forgotten, with minute leaves, the branchlets and underleaf golden in *C. fulvida*, paler in *C. vauvilliersii*, white in *C. leptophylla* and in *C. retorta*; while *C. longifolia* from Australia differs from them, and is garbed in sombre green, that not only contrasts with the surrounding foliage, but also sets off its conspicuous white flowers in summer.

Drimys aromatica, with bright red branchlets, and *D. Winteri* are probably well known; *D. colorata* is more rare, and is remarkable for the peculiarity of the leaves, yellow, as if smeared with mustard and splashed with red. In the allied genus, *Magnolia*, there is *M. Delavayii*, a recent introduction from Yunnan, with large, hard evergreen foliage, greyish dull above, more glaucous below; and *M. macrophylla*, deciduous, whose huge leaves are sometimes as much as three feet long, heart-shaped at the base. Of the *Berberis* may be mentioned the common *Mahonia* (*B. Aquifolium*) and its near relations, *B. nervosa* and *B. repens*; also *B. candidula*, *B. concinna*, *B. Gagnepainii*, *B. Hookeriana*, *B. japonica* (*Bealii*), and *B. nepalensis*—the last two with stiff pinnate foliage. Among the species of *Pittosporum* there is *P. eugenioides*, long leaves, undulating at the margins, and shining olive green; and its beautiful variegated form. Also *P. Buchananii*, paler and smaller; and *P. tenuifolium*, with two varieties, *Mayii* and *nigricans*, the latter grey and feathery. The burnished slender branchlets of the above are black, and add much to the effect which these gracefully habited and evergreen shrubs, or rather small trees, lend to the scenery. Three varieties of the common Holly (*Ilex Aquifolium*)

are perhaps less known than those usually to be found in cultivation—viz., vars. *Camelliaefolia*, *Mundyi*, and *Wilsonii*, the last two show a strain of *I. platyphylla*, which is a handsome species from Madeira, and which does well in favoured districts. *I. diphyrena*, *I. fragilis*, *I. insignis*, with large, bright green leaves, all three from the Himalaya, and *I. Perado* from the Azores, are to be recommended in mild places. *Acer reticulatum* is an evergreen Maple from China, with acuminate entire leaves, seven inches, by less than two inches wide, midribs and short stalks crimson, shoots reddish, very distinct and effective. The foliage of some other plants should be noted:—*Rhamnus libanotica*

later on it develops long tassels of greenish flowers. *Pyrus salicifolia* is useful for its silvery appearance and weeping habit. *Atriplex Halimus*, *Shepherdia argentea*, and *Convolvulus Cneorum* are also silvery shrubs, the last two with a metallic lustre; moreover, the *Shepherdia* has brown branchlets, while the *Convolvulus* produces a splendid pure white bloom. The various kinds of *Eleagnus* have a pleasing leafage, mostly white beneath, but in *E. glabra* it is brown, the twigs of each showing a corresponding colour. A grey shade is to be seen on most of the *Buddleias*, more pronounced, perhaps, on *B. Forrestii*, *B. nivea*, and on *B. macrostachya*, where it harmonises specially



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[W. E. Trevelick

DAFFODIL, NOBLE, ROYAL BOTANIC GARDENS, GLASNEVIN.

(imeritina), large, well-ribbed; *Melanthus* major, tinged blue, pinnate, leaflets pendulous and deeply cut at the margins; *Garrya macrophylla*, ample and sombre; *Cinnamomum Camphora*, sweet-scented, bright, shining, well marked midrib and chief veins, new growth reddish; *Daphniphyllum macropodon*, shaped like a *Rhododendron*, smooth, shining, dark above, glaucous below, stalks and midrib bright red. Also of a few *Hydrangeas*: *H. Sargentiana*, vivid green, hairy, producing a violet sheen when viewed sideways, cordate, of various sizes, sometimes fifteen inches by ten inches, branchlets with a mossy aspect; *H. virens*, much smaller, a remarkable mixture of light green and very dark purple, here and there mottled white; *H. aspera*, oblong and velvety; *H. radiata*, pure white underneath. *Itea ilicifolia* deserves mention, at least for its spring dress;

well with the blue-mauve panicles that appear in the summer. All the *Arbutus* are fine evergreens; in *A. canariensis* the leaves are of a deeper green than in the others, and the young shoots are tinged with red. This species, as well as *A. Andrachne*, *A. hybrida*, and *A. Menziesii*, show a smooth, bright red, or sometimes yellow, bark that enhances the value of these handsome trees.

The monotony of the prevailing green that everywhere meets the eye may be relieved by variegated plants, and golden and silver specimens are frequently planted to add a touch of another colour to the landscape. There are very many to be found in commerce, and they are so generally known that it is scarcely necessary to allude to them here, beyond a short remark on one or two of them—*Cornus alba Spæthii* (the golden Dogwood) produces a most brilliant

effect, *C. Mas aurea elegantissima* and *Bosea Amherstiana variegata* have much merit; the variegated form of *Polygonum sachalinense* is a fine combination of bright green, red and yellow; *Quercus pedunculata* *Concordia* is altogether yellow gold: it is, however, a poor grower, and, as far as I have seen, it remains a small bush, quite at home even if placed in a diminutive Rock Garden. The names of some plants with red foliage may also be acceptable. This peculiar characteristic, which serves to enliven the view, is well developed in the purple *Berberis*, *Birch*, *Hazel*, *Oak* (*Quercus pedunculata purpurascens*), *Rosa rubrifolia*, and in several forms of the common Beech tree, from the older one with a dull copper colour to the newer kinds with a very dark shade of purple. It is also pronounced in *Prunus Pissardii*, and in its sub-varieties, *Moseri* and *Hessei*; and in the Black-thorn *P. spinosa purpurea*, a thriving plant of which looks extremely well if placed in the sun where it can show itself off. It is, moreover, very conspicuous in some of the varieties of *Acer palmatum*, which, as well as *A. japonicum*, are desirable foliage plants for many reasons. Lastly, it is to be seen, though in a somewhat less durable way, in other Maples: for instance, in *A. Platanoides* *Schwedleri*, and in *Pyrus Niedzwetzkyana*, a native of the Caucasus. Those interested in this matter will find it well treated in Mr. Bean's admirable work, "Trees and Shrubs Hardy in the British Isles," which contains a list of variegated plants (I. 74). But before leaving the subject I may remark that most of the *Photinias* are to be recommended not only on account of their handsome appearance, but also because of their young red leaves; something similar may be said of *Camellia cuspidata* and of *Stranviesia undulata*; moreover, the broad-winged translucent thorns of *Rosa sericea pteracantha* add a distinct crimson colour to the plant; while the beautiful pinnate leafage of *Cedrela sinensis*, having a dash of yellowish-brown through the green, forms a most pleasing effect when near other trees.

We may now turn to another class of plants. The herbaceous *Saxifraga peltata*, the *Rodgerias*, and the *Gunneras* claim attention for their bold and striking foliage. The most remarkable of all is *G. manicata*, which, when well tended and supplied with sufficient farm-yard manure, expands giant leaves from ten feet to twelve feet across, the whole mass being more in height, and spreading over a large extent of ground. It is easy to see how mounted South-American cowboys are able to shelter themselves and their ponies from a downpour of rain under so excellent and ample a natural cover. *G. chilensis* (*scabra*) should also be mentioned, though by no means so large; both have a curious cone-

like, greenish inflorescence, more lax in the former, that adds to their interest. *G. magellanica* and *G. monoica*, on the other hand, are small carpeting plants. *Musa Basjoo*, the Plantain or Banana from Japan, and *Rhodostachys Pitcairniaefolia*, *Puya chilensis*, and a few of the *Pitcairnias* of the Pine-apple Order, grow in some mild districts, and they present so unusual an appearance that they should be tried where there is a chance of their succeeding. *Danea Laurus* (*Ruscus racemosa*, Alexandrian Laurel) is a little shrub with small, thin, bright, shining leaves. In *Lilium giganteum* they are large and cordate, diminishing in size as they ascend the flower spike, and ending sometimes more than ten feet high, with a cluster of trumpet-like lilies. In *Phormium tenax* they are long, sword-shaped, tough, and grey; in the smaller *P. Hookeri* they are less rigid, and are green; the various species are hardy, and their bloom is another feature to their credit. Clumps of Bamboos are always favourites for their graceful arching stem and pleasing foliage. They are all worth cultivating; some are of small dimensions and others rise to twenty feet and more in height. There are many kinds available, of which it is perhaps sufficient to note *Arundinaria nobilis*, with mottled brown canes; *Phyllostachys Castillonis*, bright golden striped with green; and *P. nigra*, burnished black. It is well to add that one of them, known generally as *Bambusa palmata*, with large leaves, requires a great deal of room, for otherwise, being a rampant grower, it spreads and forces its way up through the surrounding plants; many of the smaller species have also this aggressive disposition. Allied to Bamboos, is *Arundo Donax*, an up-standing Reed from the Mediterranean region; while *A. conspicua* from New Zealand takes the form of the well-known Pampas Grass from South America (*Cortaderia argentea*), of which there are several desirable varieties. *Apera arundinacea*, also from New Zealand, grows in tufts, some three feet high, and is well described by its common name, "Pheasant-tail Grass." *Restio subverticillata*, from South Africa, has much to say for itself; it does not belong to the Gramineæ, but is a welcome and interesting kinsman, with bright green canes, red bracts, and nodding plumes.

Yuccas, belonging to the Lily Order, with upright dagger-like, or more recurving foliage, give a character to a garden; and the effect is increased by the presence of their near relations, *Cordylines* or Club-Palms, looking like overgrown *Yuccas* on tall stems, but with an entirely different inflorescence. Three species at least are hardy in many parts of Ireland. The dark green *C. Australis* is often cultivated; and it assumes several forms, of which the most

striking are *doncetti*, *variegata*, *lineata*, *Parcii*, lighter in colour, and with a broad, red midrib on the underleaf, and *lentiginosa atropurpurea*, all dark red—the last-named is the best. *C. Banksii* is more foliose and shrubby, and has a variety with bright red midribs, called *erythrorachis*, which is well worth growing. *C. indivisa* is a stately plant, and surpasses them all in magnificence, with immense leaves, some six feet long by seven inches to eight inches broad, pointed at the ends; upperside shining

fitting companions to the above. *Pseudopanax crassifolium* and *P. ferox* (the New Zealand Lance-woods) have long, narrow, very thick, rigid, linear leaves, notched at the edges and painted with patches of colour; they have a strange, indeed a weird, appearance, and are unlike anything else I have seen. To the same order belong *Panax arboreum*, *P. Colensoi*, and *Fatsia japonica*, all evergreen and desirable; as well as *Acanthopanax ricinifolium*, a hardy deciduous forest tree from Japan, with a rugged,



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DAFFODIL, LADY MARGARET BOSCAWEN, ROYAL BOTANIC GARDENS, GLASNEVIN.

light green with wide yellow-brown midrib, underside glaucous, the midrib there being dark and prominent, the whole streaked with numerous well-marked veins. There is a fine hybrid raised on the Continent from this species with *C. doncetti*, and called *C. Van Groot*. When the true palms are associated with this class of vegetation, the view is still more tropical, but there are not many kinds to be found thriving in the British Isles. *Trachycarpus excelsa*, the Chusan Palm, is well able to withstand our climate, and *Jubaea spectabilis* will grow in favoured districts. *Phoenix canariensis* and some others have been tried at Rostrevor, but hitherto with imperfect results. The Araliaceæ contain some species that may be considered

thorny bark and large palmate leaves of a type seldom seen outside a greenhouse or stove. *Myoporum laetum* has green, pellucid leaves, with numerous glands that produce a peculiar effect when the sun shines through them. One or two of the Proteaceæ, moreover, display a striking foliage, and may be mentioned here. *Dryandra formosa* has been described in IRISH GARDENING of August, 1919. *Lomatia ferruginea* expands compound pinnatifid leaves like the fronds of a fern, twelve inches by eight inches, dark green; young pushes, twigs, and leaf-stalks, rich brown. In *L. tinctoria* they are smaller and tinged with a blue shade; they are also much cut and divided. In *Banksia serrata* they are long and narrow, light green,

midrib prominent; in *B. integrifolia*, *B. quercifolia*, and others, they have a glistening white underleaf. In *Hakea pugioniformis* and in *H. ulicina* they are awl-like, very sharp-pointed in the former. *Guevina Avellana* is a remarkable evergreen, like an exaggerated and glorified *Berberis Aquifolium* (*Mahonia*), growing to a large upright shrub, with brown shoots and branchlets. It comes from Chile, and is hardy, but on account of its great massive pinnate leafage it is apt to be injured by a heavy fall of snow.

Among many trees of interest we may single out the Southern Beeches, which are still rare in this country, and they are to be recommended for their small, neat, and elegantly-toothed foliage, which is dark and almost sombre in the following species, except where otherwise stated. *Nothofagus antarctica*, little more than an inch long; *N. obliqua*, nearly double the size, glaucous beneath; and *N. procera*, bright, four inches by less than two inches, ribbed, young growth reddish. These three are deciduous, the rest are evergreen. *N. betuloides*, *N. Cunninghamii*, *N. cliffortioides*, and *N. Menziesii* bear tiny box-like leaves, the last two being light yellowish green; in *N. fusca* they are rather larger and more coarsely toothed. *Castanopsis chrysophylla* is another fine evergreen from Japan, larger in its native country than in Europe, with a vivid golden underleaf. *Quercus alnifolia* from the island of Cyprus is similar in this respect, the upper side being glossy green; it is a slow grower, but hardy in many places, and a very choice Oak. *Q. acuta*, *Q. cuspidata*, and *Q. glabra* are from Japan; *Q. densiflora*, and *Q. chrysolepis*, small green, holly-like leaves, thinly powdered with golden dust beneath, are from California; and *Q. incana* from the Himalaya, long and acuminate, dark above, white beneath. All these Oaks are evergreen. *Q. laurifolia* and *Q. Macedonica* are sub-evergreen. *Q. imbricaria*, *Q. Mirbeckii*, and *Q. dentata* are deciduous; *Q. Mirbeckii* has several varieties and is easily grown, whereas the last-named is not so successful in this country, but is worth having on account of its grand foliage.

Willows are sought after for their graceful habit, their grey or silvery appearance, and their bright-coloured bark; for instance, *Salix alba*, and more especially its variety *argentea*, *S. cœrulea*, *S. daphnoides*, *S. basfordiana*, and *S. britzensis*. These are all trees; but *S. lanata* is a low, sturdy bush some three feet high, silvery, and covered with a thick coat of silky hairs. This and others which are quite dwarf, even diminutive, creepers, like *S. reticulata*, are very suitable to a Rock Garden. But the

best of all is the new *S. magnifica*, with large oval leaves, altogether unlike any of its congeners, green slightly dashed with grey, stalks and lower end of midrib purple, the upper end and the principal veins prominent, and almost white in colour. Of Poplars we may note the recently introduced *Populus lasiocarpa*, leaves on a young plant sixteen inches by eight inches, stalks and midribs crimson, *P. szechuanica*, and *P. yunnanensis*; all of them welcome additions to the arboretum. Also the older kinds, the silvery grey and white *P. alba* (*nivea*), the fastigate, *P. thevestina*, and *P. trichocarpa*, probably the best of the balsam Poplars.

It would unduly lengthen this article if we were to mention the numerous Ashes, Sweet and Horse Chestnuts, Limes, Walnuts, Hickories and many others, all worthy of description, that adorn the landscape when clothed in their summer dress; many shrubs and smaller plants of merit have necessarily to be omitted from this paper, and so the same must occur when we deal with the forest trees. But we may note the various Catalpas and Paulownias for large and massive leaves; *Tilia argentea*, the White Lime, whose silvery under side shows up well when moved by the wind; also *Ailanthus glandulosa*, *Koeleria paniculata*, *Phellodendron amurense*, *P. sachalinense*, *Rhus Henryi*, and *Zanthoxylon ailanthoides* garnished with formidable thorns, for their striking and handsome pinnate foliage. Nor should we leave out a few of the forms of the evergreen genus *Eucalyptus*, that produce so marked a contrast with the general appearance of our native woods. *E. amygdalina*, leaves linear and dark, stem white; *E. coccifera*, a rapid grower, grey; *E. globulus*, falcate; *E. MacArthurii*, reddish; *E. Muelleri*, dark with a metallic lustre glistening in the sun; *E. pulverulenta*, grey, points nearly white; and *E. Risdonii*, which promises to be an acquisition if hardy, silvery white. *Eucalyptus* trees, in common with some of the Conifers and others, such as *Laurelia serrata*, often emit a fragrance which fills the air and increases the charm which their presence imparts.

These notes would be defective without some brief reference to Ferns that nestle under trees and shrubs and form a most pleasing adjunct and setting to them. They are so highly prized, and their foliage-value is so well understood and recognised, that we need scarcely allude to the beauty and interest which they create, nor need we do more than mention some of them. *Dicksonia antarctica* is perhaps the only real Tree-fern hardy enough to grow in our climate; but where it succeeds it is a general favourite, not only because it affords an example of a peculiar type of vegetation not to be found in

Europe, but also on account of its own intrinsic merit. It forms a crown of verdure supported on a dark brown trunk, covered with aerial roots, that rises with age to ten feet and even much more in its native habitat; and the arching fronds that compose it are some eight feet long, and are cut and divided in a manner difficult to describe. It requires shade and, of course, shelter. *Adiantum pedatum*, *Cyrtomium caryotideum*, *C. falcatum*, *C. Fortunei*, *Davallia canariensis*, *Doodia media*, *Lastrea*, *erythrosora*, *L. opaca*, *Lomaria alpina*, *L. procera*, *Onoclea sensibilis*, *Polypodium Billardieri*, *Polystichum setosum*, *P. tsus-simense*, *Woodwardia radicans*, are all effective and ought to succeed at least in the milder parts of Ireland. British ferns, with their numerous and wonderful varieties, will soon swell up an outdoor collection, and make it still more attractive. Though differing altogether in a botanical sense from ferns, some of the Umbelliferae develop a foliage which at the first glance might be mistaken for them; for instance, *Seseli gummiiferum*, a very showy plant whose glaucous leaves are cut and fashioned like elaborate lace-work. Belonging to that order, the giant Hemlock, with its bold aspect, is useful in rough places. The improvement of untidy corners is not unimportant; and walls, unsightly hedges, and old thorns may with advantage be covered by climbers and other ramblers. *Actinidia chinensis*, *Aristolochia Sipho*, the Dutchman's pipe, *Berberidopsis Corallina*, *Clematis Armandi*, *C. Colensoi*, *C. grata*, *Holboellia latifolia*, *Muehlenbeckia varians*, *Lardizabala bitemata*, *Lonicera Henryi*, *Smilax laurifolia*, *Stauntonia hexaphylla*, *Vitis Henryana*, *V. megalophylla*, *V. Thomsonii*, have all of them good leafage. Some of the Roses also are adapted for this purpose, among which is *Rosa longicuspis*, recently introduced by Mr. Wilson from China, a dark evergreen rampant grower, with purple branchlets and red thorns, and with the further advantage of producing masses of sweet-smelling single flowers in large bunches and in great profusion.

When we come to plants grown to give shelter to others, we immediately think of Conifers, many of which, no doubt, are obtained with that very useful object. But others might also be used in a similar way, if not to keep out the blast in very exposed positions, at least to form secondary screens where its force has been a good deal broken and is not unduly severe; for instance, *Baccharis patagonica*, *Escallonia macrantha*, *E. rubra*, *Garrya elliptica*, *G. Thureti*, *Griselinia littoralis*, *G. lucida* (not quite so hardy), *Lonicera nitida*, Portugal Laurel, *Rhamnus Alaternus*, *Tricuspidaria lanceolata*, *Viburnum Tinus*, &c.—in which generally the

foliage is handsome and dense. Of Conifers, the kinds used to protect others from harsh winds are known, and we need not allude to them here; but there are many that claim our regard in other ways, some of which may be mentioned, and so bring these notes to an end. All the following are evergreen, except where otherwise stated. *Ginkgo biloba* is a deciduous tree, called by the descriptive name of Maiden-hair tree. *Dacrydium Franklinii* has arching branches and a general feathery aspect; in *D. cupressinum* they are slender with minute leaves; it is only hardy in favoured districts. *Podocarpus alpina* forms a small compact bush; in *P. chilina*, which is much larger, the foliage is dark and linear; in *P. Totara* it is bright yellowish green. *Juniperus Cedrus* is a handsome tree from the Canary Islands; *J. pachyphlaea*, from New Mexico, is silvery grey; *J. recurva* is glaucous, and contrasts well with the brown branches. *Tetraclinis articulata* is vivid green; it comes from Algeria, and will not stand excessive frost; it is said to resist drought, and is a very graceful, shapely plant. *Callitris oblonga* has peculiar foliage like whipcord; *C. robusta* is more like a Cypress; both have curious cones.

Of the genus *Cupressus*, *C. cashmiriana* has long pendulous, frond-like branchlets, tinted blue; it requires sun and shelter, and is a beautiful object; *C. formosana* is tinged with brown; *C. Lawsoniana* var. *Fletcheri* is one of the best of the species; *C. sempervirens* is a fine upright tree, one variety is very fastigiate, another, called *thujefolia*, also fastigiate, has peculiar foliage and is desirable. *Athrotaxis cupressoides* has closely imbricated dark leaves; in *A. laxifolia* they are more open, lighter in colour, shoots golden; in *A. selaginoides* they are stiff and pointed, still more open, and marked with white lines underneath. *Taxodium distichum* is a magnificent deciduous tree, bright green, light in form and feathery; *T. mucronatum*, from Mexico, resembles it, and is still more feathery. In *Cunninghamia sinensis* the needles are broad, long, and curved. Of the Hemlock Spruces, *Tsuga brunoniana* and *T. diversifolia* are both to be commended, especially the latter. The Blue Spruce, *Picea pungens glauca*, forms a bright sheet of colour, as does also *Cedrus atlantica glauca*; in contrast with other trees, and in the sunlight, both look as if they were really blue, and in conjunction with a shrub like *Ptelea trifoliata*, golden form, the effect is very fine; *Picea Englemanni glauca* shows somewhat the same tint, but it is not so pronounced. *Pseudolarix Kämpferi*, deciduous, is an interesting modification of the Larch, leaves long and curved. *Keteleeria Fortunei* is rare, with long, rigid, light green needles. Among the Silver



Firs, *Abies concolor* is noteworthy, not only for its own merit but for its variety *argentea* Wallezi, with young shoots painted sulphur white. A well-grown tree of *A. nobilis* shows that it has fully earned the name that has been assigned to it. *A. religiosa* is a good species from Mexico; *A. Veitchii* is to be recommended; *A. webbiana* has large, curved foliage, glossy green above, underside well-marked with white lines, cones dark blue. Of Pines we may note *Pinus Ayacahuite*, a stately tree with a large resinous cone, needles dark green; in *P. Montezumae* they are long, somewhat stiff and grey, branchlets rich brown, a very distinct plant; in *P. patula* they are fine, pendulous and graceful; these three are all splendid species from Mexico. *P. bungeana*, the Lace-bark Pine from China, appears to be a slow grower, light green in colour, foliage less dense; *P. parviflora* is glaucous, and produces its small cones very freely; and *P. radiata* (*insignis*), from California, increases rapidly and is clothed in bright green.

The Alpine Garden in June.

WITH the passing of the war the rock garden is coming into its own again. For four somewhat long years it was forced into the background by the urgent and pressing needs for more food production, and to a considerable extent had to take care of itself.

Yet, as if determined to share in the general rejoicing, it has blossomed with a prodigality beyond all previous experience. The abundant

rains of the winter and early spring, followed by the brilliant hot weather of late May and early June, have probably a good deal to do with it; but, whatever the reason, the lavishness of bloom during May and June was a pure joy to the eye, and something to be remembered.

Every tuft of the so-called Silver Saxifrages sent forth a sturdy spike and fulfilled its promise of blossom with a prodigality worthy of the peace year.

The ideal place for most of the *Euaizoonia* group is undoubtedly a crevice in a bold mass of the natural rock. Few are so fortunate as to possess such a place, but the fortunate ones should spare no pains in utilising every little chink or crevice into which a small plant can be inserted. If the rock is nearly vertical, or has a very sharp slope, pieces of stone should be driven in here and there to keep the soil from being washed from the higher parts. Once established, the plants send down their roots into the tiniest cracks, and securely anchoring themselves they cling firmly to the face of the rock, resist any amount of drought, and enjoy the most perfect drainage. Then, in due season, come the long, waving plumes of white and pink against the hard, grey mass of the natural rock.

The next best thing to the live rock is where one has a sharp slope in the garden which calls for a retaining wall here and there.

The planting should be done as the wall is built. Lay the stones on their longest and flattest side, with very little soil between them. Between the rows of stone plant not only Saxifrages but *Campanulas garganica* and *inuralis*, *Geranium argenteum*, *Dianthus neglectus*, and *Petrocallis pyrenaica*.

S. Aizoon minima is not very common, I think, but it should be grown; the rosettes are very tiny, but very beautiful and finely notched. It quickly makes a large mass, does not rust or go off in any way, and is pleasing to the eye at any time of the year.

S. kolenatiana var. *Sendtneri* is the best of the pink forms. The rosette has long, pointed leaves which partly turn crimson; the flower is a soft pink, with a blotch of deeper colour near the base. *S. Burnati* is a vigorous grower, quickly making a fine clump, and a free and lavish bloomer.

Dianthus neglectus has been magnificent. It is a large mass which is never interfered with, but just left to itself, and, having got its roots well down amongst the stones, it seems to rejoice in hot sun and dry weather.

Oxalis emeaphylla, its variety *rosea* and *O. adenophylla*, flourish exceedingly and multiply. They all bloomed very freely, and to try to describe them would be like painting the

lily. Some self-grown seedlings of *O. emeaphylla* have appeared, all of them some distance from, and most of them higher up, than the parent plant.

Roscea cautiloides bloomed very finely, and is now setting large seed pods. It is a very distinct plant, and well worth growing.

Of the earlier *Campanulas*, *garganica*, *erinus* and *W. H. Paine* were smothered with bloom. *C. Allioni* (type) and a large-leaved variety with enormous bells did well in the moraine. *C. acutangula*, also in the moraine, is a large, healthy mass, and the foliage was almost hidden from view by the blossom. It seems to thrive in a dry, stony place.

Contoneaster congesta is a delightful shrub for the surface of a rock—it clings fiercely to the surface of the stone, following and showing the contour, and is always beautiful. It gives me more pleasure than any other shrub in the rock garden.

J. HARPER SCAIFE, LL.B.

Bulb Planting.

THE advent of the bulb catalogues remind us that the bulb planting season is again with us. They further show that a return to pre-war conditions in our gardens is now possible, for the contents in many cases are nearly as choice and complete as of yore.

For beds perhaps few bulbs are more suitable than Tulips, from the early-flowering Dutch varieties, through mid-season, to the May flowering Cottage and Darwin varieties.

For a brilliant and early display the early singles are unexcelled—such varieties as *Artus*, deep scarlet; *Belle Alliance*, crimson; *Chrysolora*, yellow; *Cottage Maid*, pink and white, and others, make a brave show quite early in April, while rather later come such fine things as *Couleur Cardinal*, deep crimson; *Joost van Vondel*, cherry red; *Prince of Austria*, orange red, and others, followed by the cottage varieties, like the old, but lovely, *Bouton d'Or*, deep yellow, the *Gesnerianus*, both yellow and red; *Shandon Bells*, cream and rose; *La Merueille*, orange-apricot, and many another charming variety. Of Darwins we may again purchase *Clara Butt*, salmon rose, the fiery scarlet *Farncombe Sanders*, *Gretchen*, silvery rose; *La Candeur*, almost pure white, and *Pride of Haarlem*, old rose.

Specialists or collectors will call to mind many other beautiful varieties, and may indeed consider those mentioned as but second-rate examples, but selection must be governed by individual taste and the size of one's income.

Daffodils hold pride of place in many gardens, and are unexcelled for naturalising in grass, under deciduous trees, by the margins of lakes, ponds and streams. In beds, too, they are beautiful, and an early bed of *Golden Spur* never fails to please. There are many new varieties belonging to many sections, and while not all are, in the writer's opinion, improvements on older sorts, yet some undoubtedly are. For planting in quantity, either in beds, borders, thin woodlands, or grassy banks, there are few, if any, yet to beat *Emperor*, *Empress*,

Horsefieldii, *Sir Watkin*, *Barii* *Conspicuus*, and nearly any of the *poeticus* varieties. Others, however, which are good for grass when available in quantity, are *Seagull*, *Albatross*, *White Lady*, *Lady Margaret Boscarew*, *Brigadier*, and *Madame de Graaff*; while still others like *Kathleen* and *Blackwell*, tall, upstanding varieties, have probably never been tried. The great want at the present time is for good, yellow, trumpet varieties for grass planting. The peerless *King Alfred*, if it could be purchased cheaply, would make a marvellous show in grass if it succeeded, and so would the gloriously-coloured, but fickle, *marinus*, which seems to love only deep, damp soil. If only some of our Irish Daffodil specialists, like Mr. Wilson or Mr. Richardson, would tell us what they think of the giant *Leedsii* varieties now becoming so popular, what an impetus might be given to the cult of the Daffodil in Ireland!

Snowdrops ever retain their place in the affections of flower lovers, and their advent soon after Christmas is heralded with joy. There are many species, but none more charming than the common single.

Snowdrops do not always establish easily, and are resentful of being long out of mother earth. The best time to plant is just before the leaves have died off, but they are rarely procurable at that time. If obtained in the ordinary way from a bulb merchant they may not do of their best for a year or two, but will ultimately go ahead if planted in good damp soil; they abhor drought. The giant Snowdrop, *Galanthus Elwesii*, is now fairly plenti-



Photo by]

[F. G. Preston

REG-CYCLUS IRIS EUCHARIS.

(P. 139.)

ful, and is very handsome with its large snow-white flowers.

Scillas, from the tiny early flowering *S. siberica* and *S. bifolia* to the larger *S. nutans* and *S. hispanica*, are useful and lovely in beds and borders and on the rock-garden; *Chionodoxas* are charming, particularly *Ch. Luciliæ gigantea* and *sardensis*; there are white varieties of the *Scillas* as well as of the *Chionodoxas*. Of various other bulbs, corns and tubers for planting now we have *Winter Aconite*, *Eranthis hyemalis* and *Eranthis cilicica*, *Brodiaeas*, *Fritillarias*, *Crocuses*, *Iris*es, including *English*, *Spanish*, and *Dutch varieties*, *Liliums*, such as *L. Henryi*, *L. Fortunei*, *L. testaceum*, *L. croceum*, *L. martagon* and its varieties, *L. pardalinum*, *L. Burbankii*, and the peerless *L. regale*, so freely raised from seed and happy in ordinary garden soil.

Anemones are to be had in great variety, notably the *Wood Anemone*, *A. nemorosa*, and a host of forms, *A. blanda*, *A. appennina*, *A. ranunculoides*, gorgeous *St. Brigid's* of many hues, and the glorious scarlet *Windflower*, *A. fulgens*. To write in detail of all the many species, varieties, and garden races of bulbs, corns, and tubers which may be planted now would fill the pages of IRISH GARDENING over and over again; but enough has been written to show what a wealth of beauty we may enjoy from early spring till well into summer, and at no great cost.

X.

Notes from the Rock Garden.

Autumn Effects.

THE true rock-gardener will never be satisfied with the very usual remark that "rock-gardens only look well in spring and early summer. I believe this remark to be quite a fallacy, as I have now in these autumn weeks as good colour effects and as interesting groups of plants as at any time.

Sheets of Pink and Carmine Sedums (spectabile and rubrum), contrasting so well with the different silvery and grey *Artemisias*, have given place to another beautiful contrast, which I shall try to describe. The withered blooms and superfluous trails of the Sedums having been removed, they retire gracefully into the background; and *Artemisia pontica*, one of the large-leaved species with silvery-white foliage and spreading dwarf habit of growth, makes a striking effect beside *Aquilegia canadensis*, the dark purplish red leaves shaded to brilliant carmine having succeeded the plentiful and much-admired salmon and yellow flower of summer. *Thalictrum dipterocarpum* and deep orange Hawk Weed grow near, the latter plant, having been well cut back, makes the present display dwarfer and more abundant. Some small plants of the *Thalictrum*, which is a border variety, usually, had been planted amongst the stones for its maiden hair-like leaf. Now the long graceful sprays of small lilac and yellow blossoms, with many white stamens bending over, give a fairy-like appearance to this group. Sweetest of scents is represented in *Cheiranthus Allionii*, of deepest yellow, while tiny faces of black-velvety purple look up admiringly from their humble positions. These belong to that choice and interesting variety of Rock Viola, "Bowle's Black," and prove as does *C. Allionii* the wisdom of cutting off all withered blooms, save those for seed, and so prolonging the period of bloom. As I turn away to

look at other plants, and glance back at the group I have just described, I see that our handsome Orange Cat, "Mr. Toots," has taken up his abode in a very imposing attitude among the plants, looking as if he were necessary to complete the *tout ensemble*, and that I could not possibly leave him out.

Artemisia gnaphaliodes throws up more and longer spikes each day. A large patch of it is not to be despised. The dried sprays arrange well in winter, and its first growth looks well in summer, carpeting the ground around *Primula "Asthore"* and others. It now helps the effect of various *Campanulas*, *Scarlet Heucheras*, *Silene Schafta*, and the lovely autumn *Cyclamens*, pink, rose, and white. Many *Violas* have a prolonged life. *Campanula "Haylodgensis"* makes dense masses of blooms; a very desirable variety, easily increased, dwarf yellowish leaves, very wide bells, truly bell-like, not cup-shaped, of a lovely clear, pale lavender blue. *C. garganica* is also a stand-by in autumn, and the rock-garden does not go asleep for the winter any sooner than the beds and borders.

AMARANTHE.

Lilium testaceum.

THERE is no doubt that *Lilium testaceum* is one of the most beautiful of the whole genus, with its corolla of a delicate shade of apricot slightly tinged with flesh colour, which distinguishes this Lily from all others, its bright orange anthers forming a charming contrast with its buff-coloured petals gracefully reflexed.

Its origin is unknown, as it has never been found in a wild state, but it is believed to be a hybrid between the *Madonna Lily* (*L. candidum*) and the *Turk's Cap Lily* (*L. chalcidicum*), and it certainly bears some resemblance to these two species, its stature and constitution closely resembling the *Madonna Lily*, while the bright vermilion of *Lilium chalcidicum* shows in the delicate tint of the flowers also somewhat resembling the latter species with its reflexed petals.

It is supposed to have been first noticed among a batch of seedlings raised at Erfurt in 1846, although it has also been said to come from Japan, though neither of its reputed parents grow there; but reference is made in Dr. Wallace's "Notes on Lilies" that he had actually seen a figure of this Lily among Japanese drawings. The plant grows from five to six feet high, the flowers being borne in trusses of from six to twelve during July on stiff stems, densely clothed their whole length with linear leaves spirally arranged.

It is also known under the name of *L. excelsum* and *L. isabellinum*, but its popular English name is the "Nankeen Lily," as its colour very closely approaches Nankeen dye. It requires similar conditions to the *Madonna Lily*. The bulbs should be planted as soon as the flowering stems have died down, certainly not after the middle of September, putting them just below the surface in a sheltered position in good loam, preferably not in full sun, and if the soil is not of a calcareous nature lime or mortar rubbish should be added. They may not make a great show the first year, but once established they should be left undisturbed, when they will increase and form a beautiful mass as in the illustration.

F. G. PRESTON,
Cambridge.

Regelio-cyclus Irises.

ALTHOUGH these beautiful Irises have been in existence for nearly twenty years, they are still described as new, and certainly no word of praise can be said too highly of them. No section is worth more attention, and yet they are still uncommon, undoubtedly due to the fact that they are connected with the *Oncocyclus* Irises, a class that has been given up in despair, in most gardens, as impossible to grow. The *Regelio-cyclus* Iris originated by crossing members of the difficult section *Oncocyclus* with its closely allied, but more easily grown, section *Regelia*, and this has given us a race of plants that produce flowers of the *Oncocyclus* type from plants more easily grown.

The *Oncocyclus* Iris is obviously closely allied to the *Regelia* group both in its seed and rhizomes, the chief difference being that the *Regelia* species produce two or three flowers to each stem, in the place of the solitary flower which is characteristic of the *Oncocyclus* group, that their beards are linear, and not broad and diffused, as is found in the *Oncocyclus*, giving it the name of Cushion Iris.

The hybrids have usually two flowers to a stem, and are similar to the flowers of the *Oncocyclus* parent, while the beard may approach that of either of the sections. The credit for this race of Irises is due to the late Sir Michael Foster and Messrs. Van Tubergen, of Haarlem, who were the originators, both of whom raised many beautiful forms. The following is only a few forming a good selection, but there are others equally as beautiful. "Jocaste has white standards tinged with rose, falls silvery white and veined with brown violet." "Eucharis has silver-grey standards with brown veins." "Irene very chaste, of silvery white, with chocolate brown veins." "Charon is of bronzy mahogany colour, beautifully veined old gold and brown." "Medusa, deep violet, veined on a blue ground." "Hera, very robust growing variety, standards and falls rich ruby red with bronze and blue hues." "Psyche, satiny white, veined purple violet, falls with a black brown blotch."

In choosing a position for these Irises it should be remembered that they require all the sun our climate can give, in well-drained soil, plentifully supplied with lime or old mortar rubbish, and at no time should the soil be water-logged. Here at the Botanic Gardens, Cambridge, they are grown in a slightly raised bed, in full sun, consisting of a mixture of broken bricks and good loam (in equal proportion) to a depth of eighteen inches, below which is a good depth of drainage of broken bricks. When the plants are growing they are freely supplied with water as required. This is very important. Another essential point in the cultivation of these Irises is that the plants must have a complete rest of two or three months in the late summer, either by covering the plants with lights or by lifting them in July, and not re-planting until October. This thoroughly ripens the rhizomes, and also prevents them making premature growth, which is so easily damaged during the winter and detrimental to these beautiful plants.

F. G. PRESTON.

Haricot Beans.

DURING the war attention was drawn to the food value of various types of Beans for use in winter. When treated exactly as Dwarf or French Beans, Dutch Brown Haricot and Sutton's White Haricot yield an abundant crop. There is every reason to hope that the cultivation of these nourishing Beans may become a permanent feature in our kitchen gardens.

B.

"Guaranteed Gardening."

EVERY bookshop nowadays is full of Garden Guides telling amateurs what they ought to grow and how to grow it, but all of them have one great defect—they cannot guarantee successful results.

Now, the few plain instructions I give below will enable any man to obtain from his garden with *absolute certainty* the results that I have already obtained from my own.

The whole secret of success is to strive only after those things that your garden shows itself determined to produce. In other words, you must humour it. There is very little use in trying to force a garden's secret inclinations.

For instance, my cabbages were a failure last year. Very well, I turned my attention to caterpillars. What was the result? In a fortnight I had the finest collection of caterpillars of all sizes, colours, and degrees of hairiness that had been seen in the neighbourhood for years. You catch the idea?

I once had a garden that resolutely refused to grow anything whatever. Finally I discovered its speciality. It was cinders. For years I reduced my coal bill to next to nothing, and was on the point of setting up for myself as a coke merchant when the rich vein petered out.

Not every garden, of course, is a gold mine like this; but something can be done with the most unpromising.

Those who have not succeeded with broad beans are advised to go in for Black Fly. All that is necessary is to plant broad beans. As soon as the tops are tender the Black Fly will do the rest. You do not need to take any further trouble over these jolly little insects; in fact, they prefer to be left alone.

Green Fly culture is another interesting hobby, and almost any kind of plant will do to raise it on. The Green Fly comes out of a saliva-like mass known scientifically as a "cuckoo's spittle."

No persuasion is required to induce the cuckoo to place this on the plants; you simply remove all spittoons from the garden. This engaging creature resembles a miniature "Tank," and regards one with a haunting and appealing eye when forced to abandon its unsanitary refuge.

Slugs and Snails are perhaps the easiest of all to raise, and will flourish in practically any garden. They prefer old walls with plenty of nooks and crannies, but, having a strong sense of duty, will do their best not to disappoint you even if this convenience is absent.

The best results are obtained by planting lettuce, cauliflower, &c., near their haunts, and the right time to study their habits is after dark, with an electric torch. Once you have seen your quaint pets enjoying their evening meal of lettuce it will probably cure you of the selfish desire to eat any more of it yourself.

Turnip and Radish Tops.—It is very much easier to raise these than turnip and radish roots. To get a splendid crop of them all you have to do is to plant about 3d. worth of seed to the square yard and be careful not to thin it out.

I have not yet heard of any use to which these tops can be put, but a study of the Economy Hints in any of the weekly home papers will be certain to give the information.

Lawn Grass.—This is another crop which is a frequent failure with amateurs. The seedsman naturally foster the idea that it is necessary to buy expensive grass seed for this purpose, but the proper course to pursue is to dig and manure carefully

a piece of ground, planting the seeds of any useful vegetable. Long before you are able to identify the vegetable you will find the grass growing in beautiful natural masses without any effort on your part whatever.

To grow good potatoes requires much care and skill. Personally, I intend in future to cultivate for the stems only.

The way to make a success of these is to plant your seed potatoes in a nice shady spot, say under some thick trees. Place the seeds not more than two inches apart, and you will soon have the satisfaction of seeing your potato stems soaring skyward.

The tender shoots could probably be eaten like asparagus, and the rest of the "haulm" (as you may call it if you can afford a penny guide) would, no doubt, be quite as wholesome and nourishing as rhubarb leaves. I should be glad to have confirmation of this from any lucky survivor.

Another great advantage in handling the potato crop in this way is that there is no necessity to disfigure your garden by digging up the ground to get the new potatoes. There won't be any.

A very little common sense will enable you to select the crops that can best be grown together. It is, perhaps, unnecessary to say that cabbages and caterpillars should never be attempted at the same time.

On the other hand, it is quite practicable to raise snails along with potato tops. The snails are reasonable, and will not interfere with the potatoes as long as the lettuce supply is kept up.

In case you are like "Toddie," and "don't want to be boddered wif lots of fings," I advise you to keep hens. If you give a dozen energetic birds the free run of the garden you are not likely to be troubled with any other crop whatever.

WATERMARK.

Reviews.

The Kitchen Garden and its Management.*

THIS little book, adapted from the French work of Professor Gressent, is presented to us with additions by David Garnett. The French origin of the present work accounts perhaps for some of the recommendations regarding cropping being hardly suitable for our climate, but the instructions on the laying out of the kitchen garden are practical, and the cultivation of the soil is treated in a way that will meet with the approval of good gardeners. Throughout the work the thoroughness of the French in their methods of growing vegetables is evident, though the use of hot beds and bell-glasses is not yet commonly practised in our smaller gardens for the production of early crops.

The abundant use of well-decayed manure is insisted on and is necessary in the production of high-class vegetables of the more succulent kind. In digging it is recommended not to bury the manure too deeply, nor to place it in narrow strips in the bottom of the trench, but rather to lay it in layers along the face of each trench, the next spit being thrown against it. It may be urged against this method that being so near the surface the manure is likely to become dry and useless in spells of drought, though in a French garden this is provided against by an abundant supply of water. The fact must be faced, however, that in the majority of cases water is not laid on to the kitchen

garden, and, therefore, when the manure is in the bottom of the trench it will remain longer moist, and the roots of the plants will go down to it.

The pricking out of seedling Cabbages, &c., into nursery beds is recommended, and is a good practice, subsequently transplanting them to their permanent quarters. We are glad to notice that deep cultivation is insisted on as well as liberal manuring, since many amateurs seem to think that it is quite sufficient to manure heavily and dig lightly—a fallacy that cannot be too often exposed.

The whole concern of the vegetable grower should be to keep his plants growing quickly and without a check, and to do so requires an even supply of moisture. To ensure this constant surface cultivation and mulching are recommended; hoeing maintains a fine surface and prevents cracking and the escape of moisture, and mulching has much the same effect. At page 63 is given a table showing how a supply of vegetables of the cabbage tribe may be enjoyed from January to December. We are told that from January to April we may have Winter Broccoli and Brussels Sprouts from seed sown in July and August. Surely this is a mistake, as no one in this country would think of sowing these crops so late. Sprouts, to be any use, must be sown at least in April, and late Broccoli in May. Likewise, in April, May and June we are to enjoy Late Broccoli and Spring Cabbage sown in August. The Cabbage certainly, but hardly the Broccoli.

The Adaptor has not given sufficient thought to the climatic differences of France and the United Kingdom, nor to the commoner practice of using frames and cloches in France.

Excellent notes are given on the cultivation of the various vegetables and their place in the rotation, while at page 77 begins a calendar of monthly operations, starting with August. Here, again, the reader will observe instructions which seem strange to our own custom; the whole method is based on the use of frames and hotbeds to have young plants ready to plant out early. For instance, we are recommended to plant out in March Cauliflowers, Cabbages and Broccoli interplanted with Lettuce and endive. Here Broccoli is looked upon as a winter and early spring vegetable on account of its hardiness, and most people would see no use in having it in summer when Cauliflowers are available.

Notwithstanding the discrepancies in the recommendations, the book is well worth studying, giving as it does many hints on proper cultivation and successional cropping, and for the modest price of one shilling we consider it good value indeed.

Transactions of the Royal Scottish Arboricultural Society.

PART II, of Vol. 33 is full of interest to all engaged in forestry or arboriculture. The Scottish Society is alive to the importance of reforestation, and is sparing no effort to keep the matter in the forefront. Remarkable enthusiasm is manifested by landowners, professional foresters, and the officers of the Department of Agriculture in Scotland.

The opening pages are devoted to a report of speeches made by the representatives of the Board of Agriculture and the Interim Forest Authority at the Annual Meeting of the Society in Edinburgh, 8th February, 1919.

Many interesting and valuable articles follow—viz., *The Realisable Resources of the German Forests; Timber as a Factor in the Price of Coal;*

*The Kitchen Garden. 1s. net. Selwyn & Blount, York Buildings, Adelphi, W.C. 2.

Re-afforestation and the Supply of Plants; Memorandum as to the Taration of Woodlands in Scotland; with Special Reference to Liability for Income Tax, &c.; an intensely interesting article on *The Forests of New Zealand*; *A Bark Beetle*; a valuable and suggestive article on *The Measurement of Timber* by John Cape; *Forest Tree Seed*; *Red Pine or Norway Pine (Pinus resinosa)*, by James Kay, Forestry Branch, Ottawa, and many other interesting and useful Notes, Queries, and Reviews.

Altogether, this is a most commendable publica-

observations have been made with the utmost care, and his deductions are generally reasonable.

The theme of the book is the relationship between insects and flowers, and cleverly the author shows how the evolution of form and colour in flowers is connected with the evolution of insects. The advantages of colour, scent, and nectar are discussed in relation to insect visits, and not the least interesting feature is the amount of information given regarding the visits of certain kinds of bees or other insects to certain flowers. Much information of a practical nature is given regarding agricultural



[Photo by]

[F. G. Preston

LILIAM TESTACEUM IN CAMBRIDGE BOTANIC GARDENS.

tion, and we trust it may not be long ere the Royal Horticultural and Arboricultural Society of Ireland will be able to begin publishing and disseminating useful literature of a similar kind.

The Flower and the Bee.*

By J. H. LOVELE.

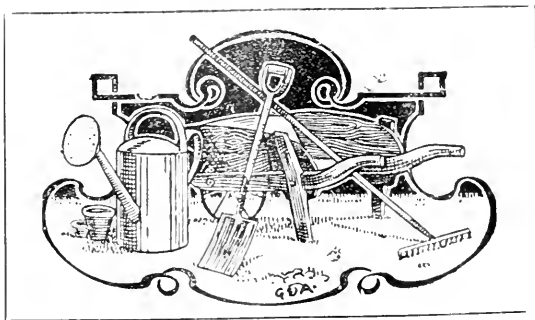
THIS is one of the most interesting and useful books which it has been our good fortune to read. The author is not only an expert entomologist of wide experience, but is likewise a practical apiarist and a skilled botanist; he is thus extremely well-equipped to write of the Flower and the Bee. His

and horticultural crops, which cannot fail to interest the practical cultivator as well as the scientific worker.

Many books have been written on this subject, more particularly, perhaps, by German writers, but the present work is certainly the most readable and practical we have seen for a very long time. The illustrations are from photographs, and although they are mostly of American flowers, they will be familiar enough to horticulturists in this country. There are well over a hundred illustrations, mostly of flowers, with one or two of insects, and they are magnificently reproduced.

We confidently commend this book to all of our readers who care to know something of the relationship between flowers and insects, either from an economic or scientific point of view.

* Constable & Co., London. 10s. 6d. nett.



Allotments.

STORING POTATOES.—When the haulm of the potatoes has died down the crop should be lifted. It is not usual to attempt storing any quantity of the early or second-early kinds, but there is a great advantage in boxing at once sufficient tubers for planting next season. Potatoes of the early varieties boxed now will give nicely-sprouted tubers early in the spring, and if the boxes are exposed to the light there is little or no danger of premature sprouting, provided the boxes are kept in a cool shed where they will not be exposed to frost. The maincrop and late kinds can be stored in clamps on the plot. To get the best results from storing, the crop may be sorted over before putting it in a clamp. The small potatoes and any affected with blight should be thrown aside for feeding poultry or pigs. The seed potatoes should be boxed, reserving the cooking potatoes for the clamp. Potatoes before being clamped should be dry and free from soil. It would also be advisable to exclude potatoes which have been injured when lifted. These could be placed in a sack for immediate use. If possible, choose a sheltered spot for the clamp, and the site should be dry and well drained. Then proceed to build the potatoes in a conical-shaped heap. Do not make a huge pyramid, but travel along the surface according to the quantity of potatoes to be stored. The heap should then be covered with a good layer of straw. If the weather is fine, and no appearance of frost, the soil should not be put over the straw for a week or two. It is well known that potatoes heat after clamping, and if the soil is not put on too soon there will be plenty of ventilation to allow the excess moisture to pass away. After the potatoes have heated, about three or four inches of soil can be put on the straw, the straw, however, should not be too wet. One of the reasons that potatoes often decay in clamps results from not providing sufficient ventilation. It is important to have plenty of ventilation. The straw need not be covered on the top until frost actually appears, and even then holes should be left along the top with a wisp of straw in. If there is any danger of frost reaching the tubers an extra covering of soil should be placed on. The soil which is dug from around the heap will provide a channel to run the water away. Should the potatoes show signs of decay it may be necessary to go through the whole heap and separate the decayed and partially decayed potatoes. In any case it is important to examine the heap occasionally to see how the potatoes are keeping. Potatoes stored in a properly made clamp should keep well until the spring.

GENERAL WORK.—There is a common saying—"One year's seedling makes nine years' weeding," and as many weeds are now seedling, a good deal of

trouble will be saved next spring by giving the plot a thorough clean up, and impressing your neighbour allotment holder with the importance of doing likewise. Many allotment holders have a genuine grievance in this case, that adjoining plots are often neglected and sources for spreading weeds throughout the section. In Belfast there is a clause in the agreement between the plot-holders and the Plots Association to the effect that men who do not cultivate their plots to the satisfaction of the committee must give the plots up. There is no hesitation about removing the man from the allotments who allows his plot to become a mass of weeds and rubbish. Every genuine complaint in this respect is investigated. Weeds will be found chiefly now among the beds of autumn-sown plants, and in the case of cabbages, these plants should be transplanted in the open ground. Any plants in reserve should be planted fairly close in small beds. These can be used to fill up the rows in the spring where plants have not survived the winter. We also plant Winter Pearl Lettuce out in rows, and treat them much the same as for Cabbages. Autumn-sown Onions should be weeded, and then make the soil firm about the roots, so that the plants will not be lifted out of the ground by frost. Autumn-sown Cauliflowers should be planted fairly close together in a sheltered spot. They are, however, much safer in a frame in the north. Leeks and Celery should have soil drawn towards them as it is required. The soil should be dry and well chopped with the spade. If large lumps of wet soil are placed against the stems, decay will follow almost for a certainty in the case of Celery. Brussels Sprouts, Broccoli, and Winter Greens should have soil drawn towards the stems; this will support the plants during the winter, and will also help to keep the surface of the ground open, preventing it from becoming water-logged. As advised last month, vacant ground should be dug over as soon as the crops are taken off. There are many plots where digging is an impossibility in the winter, owing to the state of the ground and short days, when a plotholder cannot dig the ground just when the weather and the state of the soil permits this to be done. Dig the soil deeply and leave the surface in rough lumps. Insects will be turned up and destroyed, and frost will benefit the land.

THE FLOWER BORDER.—It is not too late to take cuttings of Violas, Snapdragons, and Pentstemons. The cuttings, however, should be taken without delay now, because if they are not fairly well rooted before the winter they are not likely to survive. Bulbs may be planted in the flower border now. Tulips, Daffodils, and Crocus are very welcome in the spring. Some of the Chrysanthemums may require staking. Herbaceous plants dying down should have the old flower stems cut off and the stakes removed, tying them in bundles and storing away for use next season.

G. H. O.

The Maid of the Mist—*Gladiolus primulinus*.

THERE is now a race of *G. primulinus* hybrids of much beauty giving many shades of yellow and orange, yet the true species itself is well worth growing in our gardens.

Planted at the base of a sunny wall, it is quite hardy, coming up every year and producing its charming primrose yellow flowers in late September and on into October. Doubtless, planted in richer soil, finer flowers would be produced, but the corns might not survive the winter, and it is satisfactory to have a plant which will do well when left alone.

B.



September The Month's Work.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

THE Dahlias, Heleniums, Michaelmas Daisies, and other autumn-flowering plants will now be making a good display in the herbaceous border. These subjects continue to grow until late autumn. And they should be attended to in the matter of staking and tying occasionally, to enable them to withstand the autumn gales.

The Heleniums are amongst the showiest and most useful of autumn-flowering plants. The best varieties are *H. autumnale superbum*, tall, bright yellow; *Riverton Gem*, bronzy red; *Riverton Beauty*, very fine yellow flowers with dark centre, striatum, striped crimson and gold. These are all four and a half to five feet high, whilst *Bolanderi* and *pumilum* are very fine dwarf kinds.

The propagation of all bedding plants for next season should be completed during this month, commencing with the more tender kinds, such as *Geraniums*, *Heliotropes*, *Fuchsias*, &c., that will require greenhouse accommodation. Other kinds, such as *Calceolarias*, *Marguerites*, *Salvias*, *Pentstemons*, and *Violas* can be rooted easily in cold frames, in which they will also pass the winter safely. The frames should be prepared by putting three inches of half-rotted leaves in the bottom for drainage, and on this about three or four inches of sifted sandy soil. A thin layer of sand on the top, a little of which will fall into each hole, for the base of the cutting to rest on, will assist the rooting process.

The frames should be kept close, and the cuttings sprinkled and shaded on bright days, until they are rooted, after which the lights may be gradually removed until frosty nights render protection necessary again.

The present is the best time to plant *Violets* into cold frames for winter and spring flowering. Good drainage is essential to success with these. A good layer of long litter mixed with leaves will provide this, or, failing these, a layer of spruce boughs will answer. On this place the rougher portions of the soil, which must be light, and should contain plenty of leaf soil. The rest of the soil may be added as planting proceeds. The plants should be lifted with a good ball of soil, and so planted that the leaves will just clear the glass. The frames may be kept close for a few days until the plants are rooting freely, after which they should never be shut tight unless it is freezing.

If hardy annuals are required for an early summer display next year, the present is a suitable

time to sow such as the following:—*Candytuft*, *Larkspurs*, *Lupins*, *Clarkia*, *Godetia*, *Cornflower*, &c.

THE FRUIT GARDEN.

Apples, Pears, and late Plums will now require constant watchfulness, so that each kind may be gathered as it becomes fit. It is a common mistake to pick late Apples and Pears too soon because, perhaps, a few have been blown down. It is better to lose a few in this way than to spoil the whole crop by over-hasty picking, as, when this is done, the fruits shrivel and soon become worthless. Late Dessert Apples, such as *Cox's Orange*, *Blenheim Pippin*, *Lord Hindlip*, *Barnack Beauty*, and *Allen's Everlasting* should not be picked until October. The last-named variety usually hangs until November. The actual date varies, of course, in different seasons, but if the fruit comes away readily, or if several fall in the absence of wind, it is then time to gather the crop. This applies equally to late cooking varieties, such as *Bramley's Seedling*, *Lane's Prince Albert*, *Alfriston*, and *Wellington*.

It is always advisable to wait until the fruit is quite dry before picking, for not only will the fruit then keep longer, but it will be much brighter in appearance than if handled when it is damp.

Peach and Nectarine trees from which the crops have been gathered should be pruned without delay. Remove all the old fruiting wood that is not required for extension and train in the young growths evenly and thinly over the wall space, so that they may become well ripened before winter.

After the bad attack of caterpillar experienced last spring, it will be advisable to greaseband standard fruit trees in good time this autumn, in order to trap the wingless females of the winter moth as they ascend the trees to commence egg-laying.

Late runners should be removed from Strawberry plants as they appear, and the hoe used between the plants whenever the ground is suitably dry. It is not too late to make new plantations for next season, provided that well-rooted plants are obtainable, and that the ground has been well prepared as advised in a former article.

Preparations should now be made for the planting, lifting, or transplanting of fruit trees and bushes where much of this work is to be done this autumn. It is too early to begin yet, but much may be done to expedite matters by having the ground well prepared for new plantations, and by having soil and stakes prepared in readiness for lifting and transplanting.

THE VEGETABLE GARDEN.

The main crop of Onions should now be pulled and laid out to dry. If wet weather prevails they should be left only a few days on the ground, and then placed on hurdles or in an open shed or vinery to finish ripening before being stored for the winter.

Cabbages for use in early spring should be planted as soon as the young plants are large enough. The ground from which Onions or Early Peas have been cleared will provide a suitable site, and it need not be dug, but should be well hoed over and all weeds removed. A good dressing of soot before hoeing will be an advantage. It is best to draw shallow drills to plant in. At the first hoeing before winter, the drills are levelled in, thus providing a slight earthing up and a mulch to the plants. The drills should be eighteen inches apart, and the plants fourteen inches apart in the rows.

Cauliflower seed should now be sown, and the resultant seedlings pricked out in a cold frame, to be planted out next March or April, for the earliest batch. A good variety for this sowing is Early London. The last sowing of Turnips and Spinach to stand the winter should be thinned and hoed before the plants become crowded. Timely attention in regard to this will make all the difference to these crops later on.

The main crop of Celery will now require earthing-up at fortnightly intervals. If the weather is dry, a good watering with weak liquid manure should first be given. Remove side growths and withered leaves, and tie up the plants loosely with matting before placing the soil to them. It is not advisable to put more than a few inches of soil to the plants at each earthing.

Beetroot and Carrots, if mature, may now be lifted and stored for the winter. The former require very careful handling so that the roots are not broken or injured. These roots keep well if stored in sand behind an outside wall, especially if something is placed over them to throw off excessive rain. They must not be kept in too dry a place or they will shrivel.

Midland and Northern Counties

By W. ROBERTS, Gardener to Lady Emily Bury,
Charleville Forest, Tullamore, King's County.

THE KITCHEN GARDEN.

THE first planting of Cabbage for spring and early summer use should now be made according as the plants become strong enough. They may follow Potatoes or Onions, merely hoeing and raking the ground up for this crop. It is not an advantage to have the ground on the loose side. It is a good plan to plant at about 28 inches between the rows and from 12 to 15 inches in the rows, and where space is limited early Potatoes can be planted between the rows next March or April. As soon as growth starts, hoe the surface between rows to keep down weeds, and if slugs are troublesome give a dusting of lime from time to time. Lettuce, Parsley, Cauliflowers, &c., should be transplanted as soon as fit to handle, to a frame or some sheltered spot, where they can be protected to stand the winter and provide early spring supplies. Continue to earth-up Celery and attend to later plantings. Spring-sown Onions should be thoroughly dried before storing, and can be either banded and hung up or spread thinly in a good airy loft. Second Early Potatoes should be now lifted. Select dry weather for the operation if possible. Those required for seed may be put in sprouting boxes right away and kept in any dry, airy shed, and it is surprising the quantity that can be stored in this way against the back wall of a shed, facing north for preference, and take so little room. Sow more Winter Spinach, and thin standing crops. Keep the hoe going constantly between all growing crops, as small weeds grow

tremendously at this time of year, and later the ground is generally too wet for the operation, and clear all ground of crops that are over, and burn any refuse on the plots rather than cart it away.

FRUIT HOUSES AND GARDEN.

A great number of both Apples and Pears will require gathering now. There is no hard and fast rule, but if those that incline to fall most are taken first, much will be saved, as once they fall they are of little value; this, of course, pointing to the necessity of very careful handling in picking and storing; *re* the latter, I have seen a number of methods, each claimed as the best advocated, and perhaps I may be permitted to give mine. Granted a good fruit room—viz., one facing north, perfectly dry and not subject to much fluctuation of temperature—I put the Apples in as thick as the shelves allow—in this case about 18 in.—and leave them so until required to be either marketed or otherwise. I have seen some varieties treated this way, and not disturbed until March or April, turn out splendidly, retaining all their freshness and flavour; and at times if you lift one of these you would find it quite greasy, and in some cases quite wet. Pears, of course, require quite different treatment, and, unless where required for dessert, had better be disposed of before they become ripe, as they are very tricky subjects after that period. In both Pears and Apples I think they are all the better of being left on the trees as long as possible. Attend carefully to all Grapes, either ripe or finishing, for cracked or damaged berries, otherwise a lot of damage will be done; also wasps are encouraged; and if these pests once attack vineries it is very difficult to check them. Stop all growths with care, and unless very crowded, merely take the tip out of the growth as it is no harm to have plenty of growth just now, especially where heavy crops are or have been hanging. Keep Peaches, Nectarines, &c., well syringed, and plenty of air, and endeavour to keep the foliage healthy and on as long as possible. Late Melons require careful watering and airing to ripen, and only enough atmospheric moisture to keep them clean.

Correspondence.

TO THE EDITOR IRISH GARDENING.

DEAR SIR,—I should like to know if all the Yellow Cistus hold the flower as short a time as *C. formosus* does? I noted the time carefully a few days ago, and found the bush smothered in yellow at 8.30 a.m. and had not one flower left at 1 p.m. We have several pink and white varieties, but all keep the flower for the best part of the day. I believe there are other yellow varieties besides the one we have. Any information about them will be much appreciated.
H. S. WILLIS.

TO THE EDITOR IRISH GARDENING.

DEAR SIR,—*Re* the notes by "Arbor." It would be interesting to have the opinion of amateur plantsmen as opposed to professional on the subject of tree-pruning, excluding, of course, Fruit Trees, Hedge and Avenue Plants. Is not the character of trees obscured by pruning? Is not the necessity for branch thinning that "Arbor" refers to the direct result of the previous pruning? We have in mind trees grown for their individual beauty, and we can imagine this would be best expressed by their own natural tendency, not by repression.

ONLOOKER.

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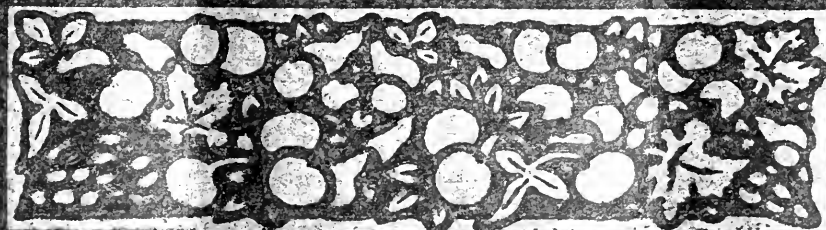
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Irish Gardening

Contents

	PAGE		PAGE
Mount Usher, County Wicklow . . .	145	Apples at the Albert Agricultural	
Notes from my Rock Garden . . .	147	• College, Glasnevin	154
<i>Pæonia Emodi</i> (Illustrated)	147	The Rose Garden	155
The Clematis in September (Illustrated)	148	Pope on Landscape Gardening . . .	155
<i>Tricuspidaria Dependens</i> (Illustrated)	150	Iris sind-pers	156
In the North	150	Wisley Trials, 1919	156
<i>Proustia Pyrifolia</i>	152	Some Wild Delphiniums	157
Late Flowering Shrubs (Illustrated)	152	Allotments	158
Crinums and Nerine Out-of-Doors in		The Month's Work—	
October (Illustrated)	153	Southern and Western Counties . .	159
Looking Ahead	153	Midland and Northern Counties . .	160
The Virginian Witch-Hazel	154		



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IRISH GARDENING

VOLUME XIV
No. 164

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

OCTOBER
1919

EDITOR—J. W. BESANT.

Mount Usher, County Wicklow.

AFTER an absence of several years it was a keen pleasure to revisit this famous garden. Mr. Walpole is a keen gardener, but discriminates in his planting, choosing only plants of merit, either for their flower, fruit, or foliage.

Near by is a fine bush of *Senecio Hectori*, with its large, handsome leaves, and in its season carrying corymbs of large white, daisy-like flowers.

Decaisnea Fargesii is an interesting shrub,



Photo by]

[F. G. Preston

PEONIA EMODI (see p. 147).

The garden at Mount Usher has not grown in a day: planting has been going on there for some sixty years, so it may be easily imagined that some fine specimens are to be seen.

One of the first plants noted was a fine specimen of *Eueryphia cordifolia*, 11 to 12 feet high, carrying hundreds of flowers, and with numerous fruits of last year just ripening.

producing from the base numerous stems, clothed with long pinnate leaves, thus forming an ornamental shrub. The flowers are greenish and not conspicuous, but the deep-blue cylindrical fruits, 3 to 4 ins. long, are distinctly handsome; the seeds contained therein are embedded in mucilage.

Rosa Moyesii and *R. setipoda*, both of recent

introduction from China, were remarkable in the wealth of "hips" borne by each: so numerous were they that the plants could be picked out among other shrubs a long way off. Those of *R. setipoda* are brighter in colour, but of the same bottle-shape so well known in *R. Moyesii*.

Cordyline indivisa is represented at Mount Usher by a remarkably fine specimen, now in fruit. The immense inflorescence arising among the upper leaves at first grew erect, but soon turned downward; and, instead of standing clear of the broad leaves, now hangs down almost parallel with the stem, and completely covered by the foliage.

Cupressus McNabiana thrives wonderfully in the mild and equable climate of Wicklow, and young specimens are distinctly ornamental, the slender ends of the branches being somewhat pendulous. At Mount Usher it is doing well.

Magnolia salicifolia is represented by several very fine specimens, which in spring give a good account of themselves and in some cases are now bearing fruits.

Cydonia japonica rar. umbilicata, a fine bush, was bearing numerous large fruits, and was recommended as a beautiful flowering shrub, bearing in spring blossoms of a lovely shade of pink.

Abies concolor rar. Wallezii flourishes; the specimen at Mount Usher being about 15 feet high, well furnished from the base, and beautifully coloured, the tips of the branches creamy white.

Tsuga brunoniana, 15 feet or more high, is attractive in the silvery underside of the leaves. The specimen at Mount Usher promises to be a fine tree in the course of time. Although not too hardy, this Himalayan tree is suitable for the milder parts of Ireland, and is well worth attention.

Fitzroya patagonica grows freely, and several good specimens are to be seen. When flourishing, this makes a graceful and pretty tree, dark green in general aspect, but relieved from a heavy or sombre appearance by the gracefully pendulous habit assumed by the ends of the branches.

Quercus serrata is growing into a handsome specimen, and is distinct in the narrowly oblong leaves, with sharp bristly teeth along the margins. A native of the Himalaya, and also China and Japan, this Oak is suitable for gardens where space is limited, as it does not usually attain a great size.

Lindera triloba, a Japanese shrub, is an interesting member of a genus notable for the aromatic fragrance of the various species, several of which can be grown out of doors in this country.

Juglans cathayensis, a Chinese Walnut, is not flourishing so well as it might be, but is bearing fruit, from which it is hoped to raise young trees. The parent is a grafted plant, which accounts, perhaps, for its unsatisfactory condition. When doing well, this species makes handsome leaves, up to 2 feet or more in length.

Rhus vernicifera, on the other hand, flourishes exceedingly at Mount Usher, a very fine specimen being at least 30 feet high, and with every appearance of continuing to grow in height. In general aspect it resembles a Walnut, with long pinnate leaves, a foot or more in length.

Cornus Nuttallii, one of the American species of the Dogwood family, becoming a tree in time, was noticeable for its fine colouring, the leaves turning yellow and red.

Other interesting shrubs noted were *Schizandra rubriflora*, clothing the trunk of an old Ash tree; *Acacia obtusata*, with the habit of *A. decurrens*; *Betula Wilsoni*, a dwarf, said to grow on cliffs in China; *Acacia pycnantha*, a mass of buds ready to open in spring; and *Vitis sempervirens*, bearing numerous clusters of black fruits like tiny "grapes."

Herbaceous and alpine plants flourish equally well at Mount Usher, though time precluded my taking notes of all.

Lewisia Howellii is represented by scores of fine rosettes, growing in a moraine and elsewhere; flowers and seeds are produced in abundance.

Myosotidæum nobile abounds, in large plants and small, apparently quite at home, and a glorious sight in the flowering season. By the sides of the old mill stream ferns abound, and in the shady recesses of the banks *Todea* flourish, and here, too, the tiny creeping *Metrosideros hypericifolia* seems quite happy. *Morisia hypogæa*, rather higher up, but not exposed to full sun, makes handsome rosettes, and flowers freely.

One of the most striking features at Mount Usher is a group of Eucalypti, chiefly *E. Muelleri* and *E. Unigera*, magnificent tall trees, their whitish trunks visible from a distance, and their grey-blue leaves distinct among the green tones of other trees and shrubs.

B.

Euonymus alatus.

This is one of the best of the Spindle Woods for autumn effect. The leaves die off a beautiful rose-pink colour, and remain effective for a fortnight or so. A native of China and Japan, it grows into a compact bush some 6 or 7 feet high, and as much through. Several other species of the same genus are notable for their ornamental fruits in autumn.

Notes from my Rock Garden.

Autumn Work.

By AMARANTHE.

THERE is much useful and necessary work to be done through the autumn weeks, I find, in the Rock Garden.

The *Burseriana* and encrusted Saxifrages now require a "moulding up" treatment of shaley stuff, such as pounded old mortar, sand or limy rubbish.

The mossy varieties like lime and good soil, but are not very particular; they do best when not parched, and slightly shaded from sun.

S. oppositifolia, our own native Saxifrage of the Porphyryon section, thrives under frequent topdressings of fine leaf-mould, and, as it is the first to bloom, it is worthy of attention and a prominent place. It is a little jewel amongst the early blooming *Primula denticulata*, when its deep rose cups, seemingly stemless, and resting on a clear green, very close carpet, contrast charmingly with the *Primulas* that vary from white to deep mauve and lilacs; and in the same locality very interesting are the little, round, blue, pink and white heads of the *Hepaticas*, too wise to open wide till the sun gains some strength.

We owe a great deal to the very large family of Saxifrages; they give something to admire, if cared for at all, all through the year, and I find them very easy to manage, the silvery encrusted varieties are very ornamental, and, I think, no Rock garden should be without a large proportion of Saxifrages—there is a wide choice, so that, though many are alike, it is not necessary to have them so. I have two special favourites among the mossy section, "Wenlock Beauty," the loveliest of pink shades, and "Rubra," the darkest and richest of crimsons, while I find *S. valdensis* amongst the silvery very valuable; those that display the long, graceful plumes are many in number, but, I think, few of these can be dispensed with in the early summer Rock Garden.

Next come the *Gentians* for treatment. Fine sand, rich soil, and tiny stones for the roots to run amongst seems to be the most suitable. *G. verna*, my most precious one, requires all the above, with more care thrown in, and all require to be taken up and divided every four or five years—this latter treatment suits most plants, though I had an old friend the possessor of beautiful, rare and much coveted plants, who ignored all hints as to dividing, by saying, "No, dear, I can't give you a piece, for if it was moved it would die." All the *Primulas* require moving and dividing, and if *P. capitata*,

P. Sieboldi, *P. farinosa* and *P. Cockburniana* are to live, it is absolutely necessary to divide them every year after flowering.

A very important work that must not be neglected is to cover the cushion *Androsaces* with a pane of glass before winter sets in. *Soldanellas* and *Eritrichium* must be treated in the same way; it is well to uncover occasionally should a glimpse of sunshine appear, but always replace again until late spring. *Verbena Chamædrifolia*, that most brilliant of rock treasures, must be slightly covered.

I do not grow any of the larger bulbs in my Rock Garden, but I delight in the tiny Hoop-petticoat Daffodils of the *Bulbocodium* series, and the *Tiandrus* or "Angels' tears" *Narcissi*, especially the white ones, these little gems should be planted now, also *Scillas* and *Grape Hyacinth* in several varieties; they are very unobtrusive, as they can be planted in little colonies beside and amongst the smallest flat-growing *Dianthus*, *Sedums*, *Thymus*, *Arenarias*, and the beautiful new *Anemone Robinsoni* or the old blue or double white woodland varieties, thus they will flourish, and come before the first full galaxy of bloom takes place.

The autumn *Crocus*, *C. speciosus*, *Colchicum autumnale* plenum and album are now making things cheery, and will help to shorten the dull time until the first blooms come after the new year has dawned.

Pæonia Emodi.

A BEAUTIFUL and distinct *Pæony*, with pure white flowers, a native of the Himalayas, and nearly allied to *P. albiflora*, differing from that species by its deep green leaves, although the chief difference appears to be in the carpels, in *P. Emodi*, there being one carpel to each flower, rarely two, and tomentose, whereas in *P. albiflora* the carpels are glabrous, and number three to four.

Although there exists the differences already mentioned, the above *Pæonies* naturally group together as distinct from others of the genus. This difference is marked by the feature of more than one flower on a stem—the second flowers being borne close to the first flowers are hidden in the illustration by the open flowers—while more than one flower on the stem of other *Pæonies* would be abnormal.

The cultivation of *P. Emodi* is quite easy, but it benefits from the protection of a wall, as Himalayan plants are sometimes liable to injury in spring; and as *Pæonies* suffer more from the sudden thawing than from the frost direct, a wall facing east is best avoided.

F. G. PRESTON.

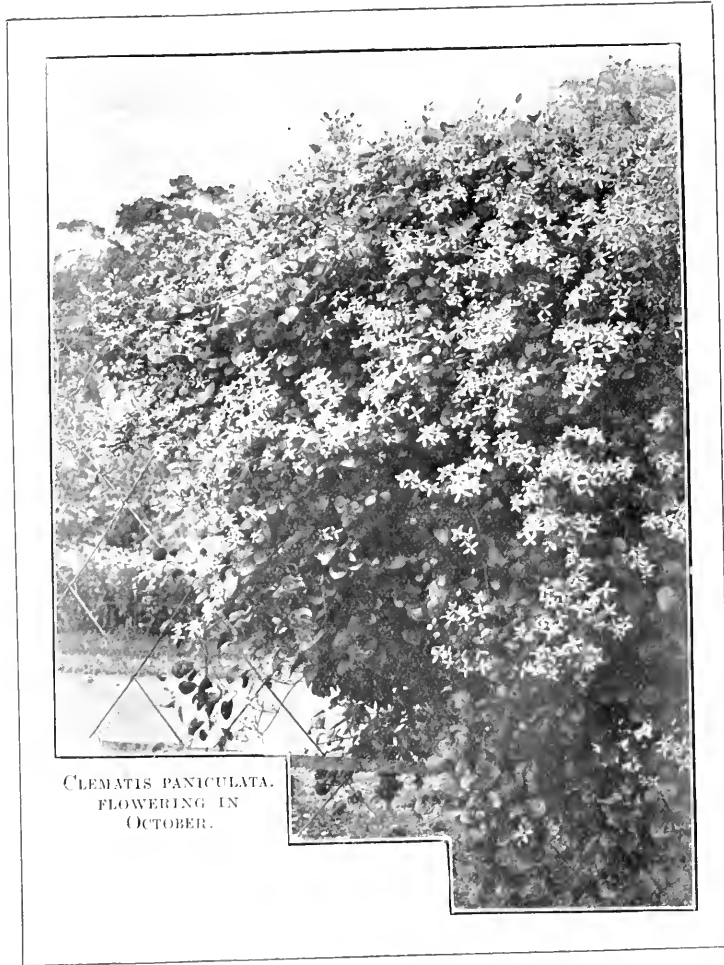
The Clematis in September.

IN gardens where a good many Clematises are grown, including the species as well as garden varieties and hybrids, the season of flowering is a long one.

During September quite a fine display was made by several species and hybrids in the

slightly overlaid with reddish brown; they are followed by bright silvery fruits of much beauty. This is said to be a variety of *C. orientalis*, but is a more ornamental plant.

C. campaniflora is an old and fairly well known species, with variable leaves composed of many leaflets; flowers freely produced, small and nodding, carried on long stalks, white,



CLEMATIS PANICULATA.
FLOWERING IN
OCTOBER.

collection at Glasnevin. They are trained over a wire trellis relieved by arches at intervals, and so arranged as to form an arbour somewhat in the form of a segment of a circle. Within the segment various herbaceous and subshrubby species of Clematis are grown and also the collection of Magnolias.

The following species, varieties and hybrids were particularly noticeable during September:—

C. akebioides, a free grower with glaucous, pinnate leaves, the leaflets stalked, ternate; flowers produced in profusion, deep yellow

tinged with blue or violet; a rampant grower suitable for covering an arbour or other rustic erection, or for climbing through and over a thin tree not otherwise valued.

C. flammula is remarkably showy in the profusion in which it bears its small, pure white flowers. The leaves are variable, composed of several leaflets, which are sometimes lobed again. A rambling grower forming a great mass of shoots, which, when covered in autumn with white flowers, form a most attractive feature; the flowers are scented like Hawthorn.

C. Jouiniana is the plant usually found in gardens as *C. grata*. It is a vigorous grower not suited for a confined space, as the annual growths grow freely, and require considerable space for development in order that the flowers may be properly seen. Leaves large, dark green, composed of several leaflets. Flowers produced in corymbs white-tinged lilac, anthers very prominent. A hybrid between *C. vitalba*, and the sub-shrubby *C. Davidiana*.

simple leaves are ovate and drawn to a point, and of ample proportions, measuring 4-6 inches long and 2-3 inches wide.

The flowers, profusely borne, are up to 4 inches or more wide, fine dark violet blue in colour, with a central "boss" of yellow stamens; in flower more or less throughout the summer. *C. orientalis*, alluded to above in connection with *C. akebioides*, is a favourite plant in not a few gardens.



ESCALLONIA MONTEVIDENSIS.

C. Hendersoni is a supposed hybrid between *C. viticella* and *C. integrifolia*. The leaves are mostly pinnate, a few occasionally simple. The flowers, of a rich bluish purple, are produced in great profusion, and are borne on stalks, some 3-4 inches long. The shoots are partly herbaceous dying back towards the base annually, but farther some years than others, according, perhaps, to the severity of the winter. During summer it will grow to a height of 8 ft or more, if supported.

C. integrifolia Durandi is another hybrid of *C. integrifolia* crossed with the large flowered *C. lanuginosa*, or other large flowered species. It is now properly called *C. Durandi*. The

The leaves, of a glaucous green colour, are pinnate, the leaflets again divided into three. The flowers produced in September are clear yellow, downy on the inside of the sepals; they are followed by feathery fruits of ornamental appearance. *C. viticella* is a good autumn flowerer when well grown, and has given rise to several varieties. It is less woody than some of the other climbing species, and requires thinning out in spring. The leaves are ternate, or pinnate with the leaflets in threes. The flowers, freely produced in September, are bluish purple.

C. viticella alba luxurians is a remarkable variety, bearing a profusion of white

flowers, the tips of the sepals tinged with green; quite ornamental when seen in a mass, though the green marking is no advantage.

C. Jackmani is a fine hybrid, and the type of a group common in gardens. All the members are good autumn bloomers, and are useful in a variety of ways. The flowers are mostly of good size, 4-5 inches wide, and in the type are of a fine, deep violet purple. There is also a white variety of much beauty, while *rubro-violacea* has maroon purple flowers, and *Prince of Wales* has reddish purple flowers, with a deeper red band down the centre of each sepal. The whole group is worth attention from those who love autumn flowers. The herbaceous or semi-herbaceous *C. coccinea*, a native of Texas, and requiring some protection, has been hybridized with some of the large-flowered species or varieties, and several useful and ornamental hybrids have resulted.

C. Etoile Rose has bell-shaped reddish flowers, the sepals paler at the margins; in *C. Clocheton* the shade of colour is deeper and very pleasing. There are several others of similar origin, the colours not always easy to describe; all, however, are useful in autumn, and grow freely from the base each summer, dying back to near the ground in winter.

J. W. B.

Notes.

Tricuspidaria Dependens.

THIS interesting shrub has not the beauty of the more popular *T. lanceolata*, but is, nevertheless, found in many collections of rare shrubs. It is, apparently, not quite so hardy as the latter, and at Glasnevin requires the shelter of a wall and a fair amount of shade; under such conditions it grows fairly well. In common with so many shrubs this year, it has flowered somewhat freely. The white pendant flowers are produced singly in the axils of the leaves on short side shoots; the flower stalks measure about an inch in length, and the flowers, which have a small calyx, are composed of fine, white petals, each with three teeth at the apex.

The leaves vary from an inch up to three inches in length, and half as wide, irregularly toothed, dark, glistening green on the upper surface, pale green, with a prominent central vein below.

Propagation is easy by means of cuttings in sandy soil, kept close and shaded for a week or two. Stock plants should be grown in pots

until required for planting out, as they do not like transplanting. When putting out permanently the addition of a little peat or leaf mould to the soil is an advantage.

J. W. B.

MR. A. B. B. WILKINSON writing from Drum-bree, Bantry, says:—

"*Tricuspidaria* flourish here; some are about 15 feet high.

"*Camellia reticulata* is a most satisfactory species out of doors. It is semi-double, and flowers splendidly every year.

"The pink *Lapageria* also proves quite hardy, and grows well when trained on trees in shady situations."

In the North.

(Continued from page 102.)

Rowallane.

AT Rowallane our attention was at once attracted by the immense number of *Rhododendrons*, all in the best of health, and reflecting great credit on Mr. Armytage Moore and his capable and enthusiastic gardener, Mr. Watson.

The collection of *Rhododendrons* is most comprehensive, and includes many of the very latest species introduced from China, India, &c. Many of the specimens of these new species are among the largest we have yet seen, testifying to the cultural skill devoted to them and to the suitability of the soil and climate at Rowallane. Through the kindness of Mr. Moore readers of *IRISH GARDENING* have had the opportunity of reading of the *Rhododendrons* at Rowallane, and of learning Mr. Moore's estimation of the value of the various species and varieties.

It may seem selfish on our part, but we earnestly hope Mr. Moore may continue to contribute these *Rhododendron* notes for the benefit of gardening people in Ireland, where, in many parts, *Rhododendrons* flourish so well.

Among other interesting plants at Rowallane we noted *Viburnum huphense*, of which we have since received fruiting specimens, showing a mass of charming coral red berries; *Styrax Wilsoni*, a delightful little shrub, with small leaves and tiny white flowers in early summer; *Plagianthus Lyalli*, a marvellous specimen, 18 ft. by 24 ft., and furnished from the base to the top; *Carpentaria californica*, the fine, broad-leaved variety; *Vaccinium ovatum*, a delightful late summer flowering shrub, with small, stiff leaves, and bearing drooping racemes of white, bell-shaped flowers.

The rock garden is full of interest, and contains a remarkable collection of plants adapted for rock work. In addition to many choice alpine well grown, many of the dwarf *Rhododendrons* are now being accommodated there, and look extremely well, and naturally so, since nearly all of them are mountain plants in their native habitats.

Many other new Chinese trees and shrubs are being tried, and as years go on Rowallane will become more and more one of the most interesting places in Ireland.

Rostrevor House.

WITH a comparatively mild climate and a magnificent situation, Sir John Ross has fully availed himself of his opportunities. There is little doubt that here we have the largest collection of plants, growing in the open, in the whole country. Many have written of the Rostrevor House collection, but it seems inexhaustible, as each visit reveals some new addition, or some hitherto unnoticed specimen. There is never time to take special notes of each, with the result that our jottings incline to become a mere list of plants seen. However, Sir John has of late given readers some idea of his enormous collection, and we need do no more than allude to the many treasures it was our privilege to see, without any attempt to describe each. In the nursery yard *Parsonsia albillora* on a wall was flowering freely rambling over other shrubs; *Dryandra formosa*, figured in a recent issue, was noted, likewise *Besheorneria yuccoides*, a noble specimen; *Iris gracilipes* was flourishing in ordinary garden soil, in a hot, sunny position; a young plant of the rare evergreen oak, *Quercus Vibrayeana*, from China and Japan, was noted, and a new species of *Cupressus* collected by Forrest; *Abies sachalinensis nemorensis* is a new Fir collected by Wilson; *Podocarpus acutifolius* will be an addition to the other species which flourish in some parts of Ireland; *Calycotome infesta* is an interesting spiny shrub for a warm, sunny spot; the old *Eccremocarpus scaber*, scorned the necessity for soil, has established itself between the bricks at the top of a wall, and rambles freely; *Stachys coccinea*, so often killed in some localities, loves the warmth at Rostrevor. On the hill between the house and garden *Dacrydium Frankii* flourishes—a fine specimen—and near it *Tetralinis articulata* from Morocco flourishes in company with *Hakea ulicina*, 10 ft. high; *Cinnamomum Loureirii* from Cochin China was also noted, and one could not but remark the fine plants of *Geranium anemonæfolium* flourishing luxuriantly always in shade. *Rhododendrons*

are a feature at Rostrevor, and all the old, as well as the newer, species are represented; we noted particularly *Rh. basilicum*, *Rh. spinuliferum*, *Rh. Keiskii*, *Rh. oreodoxa*, and *Rh. halense* as little known species, but there were scores of others, many of them large specimens.

The China Tea plant *Camellia Thea* (*C. theifera*) is interesting, and makes a nice shrub, and equally interesting is the rare Australian *Actinostrobus pyramidalis*; *Weinmannia racemosa* will apparently make a handsome evergreen, as will *Dacrydium Cupressinum*, and *D. Colensoi* from N. Zealand; the spreading form of *Libocedrus decurrens* is of much interest compared with the narrow, columnar habit of the better known form.

These are but a few of the beautiful and interesting plants noted, but they will serve to show the remarkable range of the collection.

Daisy Hill Nurseries.

THIS remains still the most remarkable commercial collection to be found anywhere, and it is impossible, in the course of one brief visit, to examine a tithe of the plants in the nursery.

Miscanthus japonicus is a tall, handsome grass of rare effect, and well suited for ornamental planting; a fine specimen of *Dicksonia lanata* was noted in a cold house or shelter; *Rubus ireneus* is a fine bramble with large handsome leaves, and nothing weedy about it; *Fagus Cunninghamii*, one of the New Zealand Beeches, is well grown and stocked at Daisy Hill; and the new *Olearia oleifolia* is declared by Mr. Smith to be much hardier than *O. Haastii*. *Ferula orientalis* and *F. neapolitana* are tall, handsome Ferns suitable for wild gardening. *Rosa Nuttalliana* is a favourite at Daisy Hill on account of its exquisite fragrance. The uncommon *Helwingia japonica* was noted, and fine specimens of *Cotoneaster acuminata*, *Sorbus alnifolius*, *Prunus nanus*, and *P. Georgicus*, *Betula globispica*, an uncommon Birch, and the equally rare *Betula Medwediewi*, often difficult to establish; new Barberries, *Cotoneasters*, *Roses* and *Rhododendrons* are being raised in quantity, and in a few years there will be an enormous supply available for distribution. Many fine specimens of *Abies Mariesii*, some five feet high, were noted, and grand plants of *Pitroya Patagonica*, four to five feet in height; *Leucothoe recurva* is an interesting dwarf shrub rarely seen in gardens, but well adapted for peaty formations or loamy soil free from lime; *Stuartia virginica* and *Andromeda tetragona* were also noted, and a most distinct form of *Castanopsis*—viz., *C. chrysophylla var. obtusifolia*, with almost round



CLEMATIS JOUVIANA.

leaves; *Osmanthus myrtifolius* makes a neat evergreen, with small, dark green leaves. Of herbaceous plants we noted large quantities of such good things as *Incarvillea Delavayi*, *I. grandiflora*, *Trollius napellifolius albus*, *Cheiranthus alpinus Moonlight*, *Tritoma modesta*, *Iris Douglasi + tenax* in many forms; *Crocus imperialis*, immense quantities of Irises, Delphiniums, and, in short, all that is best in the way of herbaceous plants; truly, a great collection. B.

Proustia Pyrifolia.

This interesting Chilean shrub is a member of the great Compositae family, and is fairly hardy, even on a north wall. During very severe winters the shoots may be killed back to half their length or so, but new ones grow away rapidly in spring. The shoots are long, slender, and apparently adapted for rambling through and over other shrubs, but do not possess spines, and have no inclination to twine. Lightly tied against a wall, the ends of the shoots hang down, and the flower-heads are produced at the termination of the shoots and

in the axils of the upper leaves. Individually, the flowers are small, the petals white, anthers reddish violet; the leaves are stiff, and of good substance, shortly stalked, alternate, oval with a sharp spiny point irregularly spiny-toothed on the margin, and clothed with soft down below; the leaves assume different positions on the shoot, some being almost erect and others spreading horizontally. With somewhat the aspect of *Mutisia*, to which it is related, this interesting shrub is well worth trying in the milder parts of Ireland.

Late Flowering Shrubs.

ELSHOLTZIA STAUNTONII, a native of China, has flowered rather well this year, and has been noticeable rather, perhaps, because of the scarcity of shrubs flowering in September and October than from any great merit it has. Each shoot is terminated by a slender panicle of small, purplish-pink flowers, distinct from anything else in the way of shrubs at this time. The leaves are lance-shaped, with a few coarse teeth on the margins, and have a not unpleasant scent when bruised. A well-drained soil and a sunny position are essential, and even then the shoots usually die back more than half their length during winter, but new growths are produced from the base of the previous year's shoots in spring.

Caryopteris Mastacanthus, from China and Japan, is one of the most satisfactory late autumn flowering shrubs we have. It belongs to the Verberna order, and forms a twiggy shrub with opposite leaves, the current year's shoots being terminated by corymbs of bright-blue flowers in October. As inclement weather is not infrequent during the period of flowering, it is well to give this shrub a sunny, sheltered position, where it will get the benefit of any good weather there may be, and it is well worth a place on a wall. It may be propagated by seeds or by cuttings of the young growths in summer.

Escallonia montevidensis has this year had a fair chance to develop its large panicles of white flowers. Here it is only a success against a wall, though elsewhere, in the milder parts of Ireland, it succeeds as a bush in the open. The evergreen leaves are 2 to 3 inches or more in length, and up to an inch wide. A great many strong shoots are produced during summer, and in the spring it is necessary to severely thin out the previous year's growths, especially those which have flowered; the shorter shoots, which did not flower the previous autumn, may be left to grow on.

Bursaria spinosa is an interesting late flower-

ing shrub, suitable for a wall. The small, white flowers, borne in panicles, have an agreeable Hawthorn scent. The leaves are only an inch, or little more, in length, and narrow, placed alternately on the slender, wiry twigs. Propagation may be effected by cuttings taken in summer before the flower-buds form, and occasionally seeds are produced.

B., Dublin.

Crinums and Nerine Out-of-Doors in October.

PLANTS which flower well in October are much to be desired, and are worthy of attention, more particularly those of a perennial nature.

The abnormally warm, dry summer we have just experienced has suited many plants, though some few may have suffered from drought. The fine spell, continuing well into October, has proved very beneficial to plants which naturally flower late, or given suitable weather continue to produce flowers.

The Crinums, mentioned at the head of this note, belong to the latter category, and although they have flowered freely since August, are still, in the middle of October, carrying flowers in plenty. The species figured in the present number of IRISH GARDENING is *C. Powellii*, perhaps the best-known of the hardy Crinums, if we except *C. longifolium*, better known as *C. capense*.

C. Powellii is a hybrid between the S. African *C. Moorei* and *C. longifolium*, also from S. Africa. The habit of growth is well shown in the illustration, the flowers being produced in succession in umbels carried on tall, stout stems. In colour, they are pale pink, and there is also a white variety of equal beauty.

C. Moorei is quite as suitable for outdoor culture, and is of similar habit, the flowers, however, being deeper in colour; like the last-named, this species too has a pure white form.

All the Crinums rejoice in a deep, warm soil, in a sunny position, and when planting, the top of the bulb should be at least six inches below the surface. Where hard frosts are common in winter and early spring, the base of a sunny wall or close to a greenhouse is a suitable place to plant Crinums, as there the soil is usually fairly dry and well drained, and frost does not penetrate to the same extent.

Nerine Bowdeni as an outdoor plant is quite a recent feature in gardens, but one that has come to stay. Judging from our experience so far, it is quite as amenable to cultivation in the open as *Amaryllis Belladonna*, and enjoys the same conditions. Generally speaking, the Crinums, *Amaryllis* and *Nerine* require warm,

well drained soil and sunshine to ripen the bulbs sufficiently to flower well. The Crinums usually retain a proportion of their leaves throughout the year, at least in this locality, but the *Amaryllis* and *Nerine* lose their leaves in summer and push up their flowers in autumn. A native of S. Africa, *Nerine Bowdeni* can now be purchased cheaply, and will be welcomed by many who wish for interesting perennials with beautiful flowers. The flowers are pink, with a darker line down each segment, and are produced in umbels of from 6 to 12 flowers, produced at the end of a tall stem from 18 inches to 2 feet high.

B.

Looking Ahead.

SHOWS AND COMPETITIONS.

DURING the months of July and August many local societies arrange for flower shows, allotment and cottage garden competitions, &c. A pertinent question to ask concerning these would be: with what object are they inaugurated? and to what extent do they fulfil their purpose? and if they fail, what is the reason for any apparent failure? Is it to create a pleasant social function? to encourage a higher standard of cultivation and productivity? to induce the introduction of new varieties and novelties of plants? to educate the public and cultivators? or to give the many underpaid gardeners a sporting chance of winning a few shillings by means of their industry and skill? Take allotment holders' competitions in particular. What are the objects of



Photo by]

[E. Miller

NERINE BOWDENI.

prize schemes in this case; and to what extent, if any, are these objects achieved, whether on the plots or at the show? Here, at least, it would seem that the primary objects of the competition—if this aspect of the matter has been considered at all—is to stimulate a healthy rivalry amongst the plotholders in order to secure an increase in the quantity, quality and variety of produce grown. To encourage the cultivation of vegetables which are particularly necessary and useful to plotholders and their families, and of the flowers which they can easily grow and appreciate. Incidentally, where a show is arranged, calling the attention of the public, and possible future plotholders, to the importance of the question of "gardens for the people," one might reasonably ask: what vegetables ought to be grown by a plotholder? Where the plot is a large one the answer is clear—all the vegetables that would be required by his family during the whole year around; and where the plot is a small one—those vegetables which he requires, which are the most expensive to buy or most difficult to obtain locally. Such being the case it might be asked: does a competition held in July or August fill the bill? or would it not be wiser to arrange for an additional competition during the winter months, so as to induce plotholders to grow the more expensive winter vegetables, rather than inducing them to overcrowd their plots with summer vegetables and with out of season winter vegetables, all maturing during July and August. Take, for instance, a typical competition, that for the best cultivated plot. How often does this fulfil the object for which it has been introduced in a schedule of prizes? In such a competition the plots are often judged only once, the approximate date being announced a month or more beforehand, there is consequently every opportunity for cleaning up, &c., to be done by those who have the spare time to do it.

The judges take the plots as they stand at the moment and make their awards accordingly. Being skilled observers they are able to judge as to what has been, and is likely to be, done. But their awards must be for the plot as they see it. Three months afterwards the prize winners may have the most neglected plots in the group. Then again, take another typical competition, that for the best collection of vegetables at the local show. Here variety often counts to an abnormal extent, so that one sees splendid heads of Leeks, Celery, Savoy Cabbages and various other out of season vegetables—which consequently have very bad keeping qualities—in the premier collections. And again, the prize for the "best group of alliments," quite apart from the difficulties of comparing groups of various sizes, which may be near or miles away from each other, there are so many different natural features, and other local conditions prevailing that it ought to be questioned if such a prize should be given at all. There are many other aspects of the subject which ought to be considered by a competent authority.

My particular object in writing at the moment is to call attention to what I have long considered to be a matter of first importance to horticulturists and others. It is so easy to go on in a groove, without halting to take stock, and to consider where we are going, what we are doing, and why?

W. H. J.

N.B.—"Plots" and "allotments" are considered synonymous terms in the above note.

The Virginian Witch-Hazel.

Hamamelis virginiana.

THIS shrub or small tree is chiefly of interest as flowering in October. Compared with the winter and early spring flowering species, such as *H. japonica* and *H. mollis*, it is not in the front rank, yet when found in a shrubbery or about the grounds at this season it affords not a little pleasure to those who can see something more in a plant than merely showy flowers or fruit. The striking part of the flower is found in the four narrow strap-shaped, almost thread-like, petals of a bright golden, yellow colour; the flowers are produced in clusters of two, three or four together, and as a rule are somewhat hidden by the leaves. This year, however, many of the leaves have fallen early, due, perhaps, to the drought, and consequently the flowers are more noticeable than usual.

Apples at the Albert Agricultural College, Glasnevin.

THE horticultural section of the model farm in connection with the above national institution is designed to instruct young men in the principles and practice of fruit and vegetable growing. The instruction thus given is subsequently disseminated throughout the counties of Ireland by horticultural instructors who have been trained in the College garden. The orchard is laid out on model lines, and is planted with a very large collection of apples and bush fruits with a view not only of rendering the embryo instructors familiar with varieties of fruits, but also of testing those likely to be successful in Ireland. Every gardener of experience knows that a variety may succeed in one place and not in another; that some varieties are suitable, and indeed indispensable, in a private garden, but are totally unsuitable for orchard cultivation. The orchard at Glasnevin is not only an example of how to lay out a plantation of fruit trees, but affords an object lesson in the varieties most suitable for market work.

At the time of our visit on October 6th the following were noted as fruiting freely:—

COOKING VARIETIES

Anna Elizabeth, recommended for cooking or dessert; *Bramley Seedling*, fine trees carrying a great crop of good, clean fruits; probably the best for general planting; *Bismarck*, a fine cropper, fruit large and well coloured; *Newton Wonder*, a rival to *Bramley Seedling*, but not quite such a certain cropper, though established trees usually bear well; *Winter Hawthornden*, large fruits, light yellow, and red on the sunny side, *Hector Macdonald*, carrying a very fine crop of good-sized fruits—often described as an early *Lane's Prince Albert*; *Sandringham*, a good late keeping variety, green, but colouring on the sunny side. The old Irish variety, *Cothead*, of characteristic long shape, was carrying a fine crop of large fruits, and is well worth attention, at least in private gardens.

DESSERT VARIETIES

Golden Russet, an old Irish variety of upright habit, was carrying a good crop, and equally attractive was *Egremont Russet*; *Duchess of Gloucester*, said to be the same as *Duchess Favourite*, was in excellent form, carrying a good crop of brilliantly coloured fruits; *Allington Pippin* is a dessert variety of much merit, a fine cropper of

excellent flavour; *Rival*, a brilliantly coloured variety, usually fruiting well, is likely to be largely planted when better known; *American Mother* is an attractive apple of conical shape, colouring next the sun, of good flavour, and ripening in October; *Christmas Pearmain* is of upright habit, fruits of medium size and good flavour towards the end of the year.

The Rose Garden.

RUST ON ROSES.

THE winter spore stage of the Rose Rust *Uredo rosae* is very common this autumn, and many leaves can be seen with the under sides almost black with *Teleutospores*. These winter spores are

Pope on Landscape Gardening.

In an article in *The Spectator* of September 20th the following passages occur, and may be of interest to our readers:—

The geniuses of Architecture and of Landscape Gardening hover over the Moral Essays and the Satires. It would be difficult indeed to find a more felicitous use of language at once technical and yet comprehensible as that which describes the spirit in which garden architecture should be approached:—

“To build, to plant, whatever you intend,
To rear the column, or the arch to bend,
To swell the terrace, or to sink the grot,
In all, let Nature never be forgot;



[Photo by

[E. Miller.

CRINUM POWELLII.

so constructed as to survive the severest weather, and, falling to the ground with the dying leaves, hibernate in the soil and soon infect the young leaves next spring. All leaves now falling or lying about the beds should be collected and burned, so as to reduce the chances of reinfection. In spring, before the leaf buds open, say just after pruning, a thorough syringing with potassium sulphide will be effective in destroying many germinating spores. An inch or so of the top soil might be removed with advantage, as many winter spores would thus be got rid of. A dressing of rotten manure, lightly forked in, would have the twofold result of feeding the roses during the growing season and of making up for the removal of the top soil. Late flowering Ramblers should be thinned out now, and the growths remaining securely tied up, otherwise, if a heavy “head” of growth be left much damage may result from winter winds.

GROWER.

But treat the goddess like a modest fair,
Nor over-dress, nor leave her wholly bare;
Let not each beauty everywhere be spied,
Where half the skill is decently to hide.
He gains all points who pleasingly confounds,
Surprises, varies, and conceals the bounds.
Consult the genius of the place in all;
That tells the waters or to rise or fall;
Or helps th’ ambitious hill the heavens to scale,
Or scoops in circling theatres the vale;
Calls in the country, catches opening glades,
Joins willing woods, and varies shades from
shades:
Now breaks, or now directs, th’ intending lines;
Paints as you plant, and as you work designs.”

Every epithet in the first three lines gives the extreme characteristic expression of what the poet desires to convey.

Even when Pope smears the satiric arrow with the bitterest and most irritating of his deadly un-

quents, one feels his delight in the technicalities. Here is part of the picture of Timon's Villa:—

"Two Cupids squirt before: a lake behind
Improves the keenness of the northern wind.
His gardens next your admiration call;
On every side you look, behold the wall!
No pleasing intricacies intervene,
No artful wildness to perplex the scene;
Grove nods at grove, each alley has a brother,
And half the platform just reflects the other.
The suffering eye inverted Nature sees,
Trees cut to statues, statues thick as trees;
With here a fountain never to be try'd,
And there a summer-house that knows no shade;
Here Amphitrite sails through myrtle bowers,
There gladiators fight or die in flowers;
Unwater'd see the drooping seahorse mourn,
And swallows roost in Nilus' dusty urn."

Iris sind-pers.

Of the many Irises suitable for the rock-garden, *Iris sind-pers* is one of the best, coming into flower early in March and remaining out for about a month. This charming little hybrid originated from crossing two Juno Irises, the tall *Iris sind-jarensis* with the stemless *Iris persica*. The foliage is intermediate between the parents, while the flowers, which are four inches across and six inches high, are of a fuller colour than in the female plant, but without the patch at the apex of the falls that is so conspicuous in *Iris persica*.

It is exceedingly floriferous, forming a mass of pale blue, relieved by a golden yellow line down the falls, also by purple dots, the standard, as in all Juno Irises, being small and reflexed.

It delights in a sunny spot in well-drained soil, and here in the Botanic Gardens, Cambridge, it goes on year after year, and increases satisfactorily.

F. G. PRESTON.

Wisley Trials, 1919.

THE following awards have been made to Turnips, First Early Potatoes, and Autumn Raspberries by the Council of the Royal Horticultural Society, after trial at Wisley:—

TURNIPS.

Award of Merit.—No. 12, Extra Early Purple Top, sent by Messrs. Barr; 9, Little Marvel, sent by Messrs. Barr*; 44, Red Globe, and 51, Early Snowball, both sent by Messrs. Sutton; 53, Early White Model, sent by Messrs. Barr; 69, Greentop, Sixweeks, sent by Messrs. Sutton; 70, Manchester Market, sent by Messrs. Barr*; 71, Manchester Market, sent by Messrs. Dickson & Robinson; 72, Marble Green Top, sent by Messrs. Barr.* (Nos. 69 to 72 are regarded as similar to one another.)

Highly Commended.—5, Early White Milan, sent by Messrs. Sutton; 16, Red Milan, sent by Messrs. Webb; 22 and 23, Matchless, sent by Messrs. Barr* and Sutton; 27, White Gem, sent by Messrs. Sutton; 31, Jersey Navet or Half-long White Vertus, sent by Messrs. Barr; 42, Early White Strap-leaved, sent by Messrs. Sutton; 43, Strap-leaf, White Stone, sent by Messrs. R. Veitch (Nos. 42 and 43 are regarded as similar to one another); 57, Model White Stone, sent by Messrs. Watkins & Simpson; 76 and 77, Green Top Stone, sent by Messrs. Barr and R. Veitch.

* This sender has not yet catalogued this variety.

FIRST EARLY POTATOES.

Award of Merit.—44, Western Hero, sent by Messrs. R. Veitch.

Highly Commended.—46, Eclipse, sent by Mr. W. G. Holmes; 21, Midlothian Early, sent by Messrs. R. Veitch; 1, Sharp's Victor, sent by Mr. W. G. Holmes; 114, Witch Hill Seedling, sent by Messrs. Cross; 56, Sharpe's Express, sent by Messrs. Dobbie.

Commended.—99, Early Champion, sent by Mr. Findlay; 109, Epicure, sent by Messrs. Barr; 117, Resistant Snowdrop, sent by Messrs. Cross.

AUTUMN RASPBERRIES.

Award of Merit.—9, Surprise d'Automne, sent by Mr. Cousens.

THE Royal Horticultural Society will carry out a trial of Roses to ascertain their resistance to rose mildew in their Gardens during 1920. Three plants of each variety for trial should be addressed to the Director, R. H. S. Gardens, Wisley, Ripley, Surrey (Goods: L. & S. W. Ry., Horsley), to reach him by November 30, 1919. Entry forms may be obtained on application to the Director.

The Royal Horticultural Society will carry out a trial of Perennial Asters (Michaelmas Daisies) in their Gardens at Wisley during 1920. Three plants of each variety for trial should be sent to the Director, R. H. S. Gardens, Wisley, Ripley, Surrey (Goods: L. & S. W. Ry., Horsley), to reach him by November 30, 1919. Entry forms may be obtained on application to the Director.

The Royal Horticultural Society are desirous of making a thorough trial of Currants of all kinds in their Gardens at Wisley, both to try their relative value as fruit bushes and to assist in securing a standard of nomenclature for them. They would be obliged if growers would send three plants of each variety, addressed to the Director, R. H. S. Gardens, Wisley, Ripley, Surrey (Goods: L. & S. W. Ry.), to reach him by November 30, 1919. Entry forms may be obtained from the Director.

NOTICE

READERS are invited to submit questions bearing on gardening in any of its branches. It is our desire to stimulate and encourage gardening in Ireland, and we are in touch with experts who will be glad to give every assistance.

We are always open to consider articles, and would be glad to receive photographs—of gardens or plants—for publication, if suitable; senders will oblige by stating whether payment is desired in the event of publication.

Contributions should reach the Editor not later than the 15th of each month.

Some Wild Delphiniums.

COMPARED with the garden varieties of the present day, few of the tall, blue species of *Delphinium* are worth growing. *Delphinium formosum* is one of the best, and probably gave origin to some of the types now common in gardens—such as the *Belladonna* set, for instance.

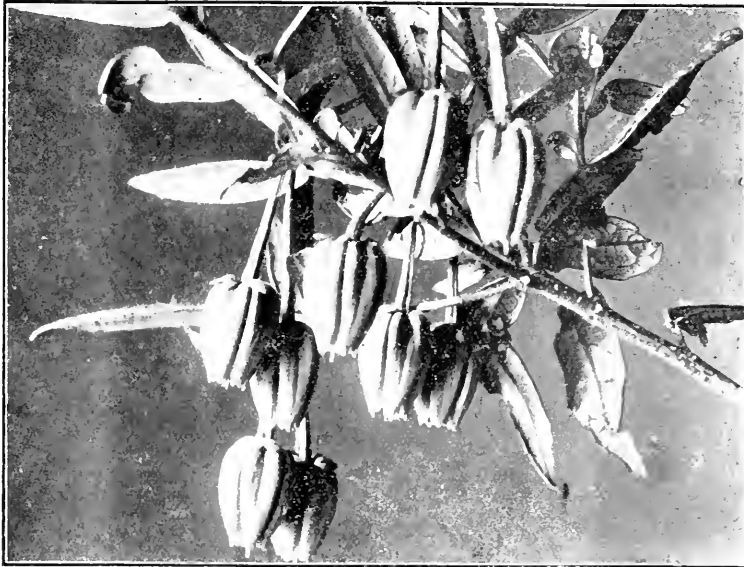
There are some dwarf species, however, of rare merit for the rock garden, and some taller biennials that repay good cultivation and never fail to call forth admiration when seen in good form.

D. Brunonianum is one of the dwarf sorts, hailing from Thibet and growing only a foot or perhaps eighteen inches high. It bears light, purple flowers, borne in clusters rather than in a spike, as is common with the taller species. The centre

elegance of the whole plant. It flourishes in good soil, not too dry, but efficiently drained, and, although a perennial more or less, is best treated as a biennial, sowing seeds every autumn as soon as ripe, putting out the young plants the following spring.

D. nudicaule, from California, is deservedly popular, flowering from summer on into autumn. The colour is practically orange red in effect, seedlings varying a little perhaps in depth of shade. The leaves are rather fleshy in texture, and sparse at flowering time. Although perennial, the best results are got from sowing annually, when a good display is certain throughout the summer.

D. sulphureum, from Syria, is remarkable in its rare yellow flowers, but it is by no means easy to cultivate. The seeds should be sown where they



TRICUSPIDARIA LANCEOLATA.

of the flower is black, and the plant has a musky odour.

D. Cardinale is a remarkably fine species requiring some care in cultivation. It is one of the taller kinds, reaching at least four feet when well grown, and producing handsome spikes of scarlet and yellow flowers. It is a biennial, forming thick, fleshy roots, and should be sown in summer or autumn in boxes or in the open, and left till the following spring, when it should be very carefully transplanted to the borders.

D. cashmirianum is a low-growing perennial from Kashmir, growing about eighteen inches high and bearing corymbs of pale blue flowers. An ornamental plant for the rockery, rejoicing in a sunny position in good, well-drained soil.

D. grandiflorum is one of the finest kinds we have, either for the rock garden or herbaceous border. In colour the flowers are of the brightest blue, varying somewhat in shade, but always of a good blue, except in the white variety.

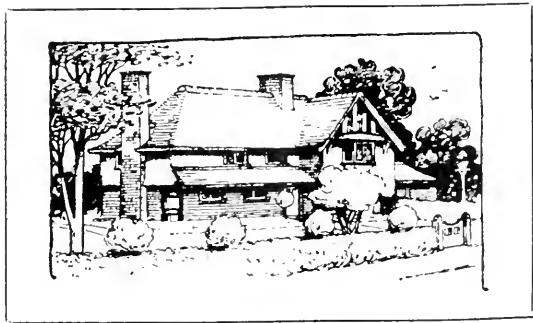
D. grandiflorum "*Cincaria*" is a popular variety at the present time. The leaves are very prettily cut into fine segments which adds to the

can remain for a year, and, if to be transplanted great care must be exercised in lifting, as the roots are susceptible to any injury. If it could be arranged to sow the seeds where the plants could remain to flower, better results would attend the cultivation of this choice plant. It will grow at least four feet high when happy, and should have a deep soil in a sunny position. In all cases it is advisable to sow seeds as soon as they are ripe.

LARKSPUR.

Annuals for Autumn Sowing.

It is a good plan to sow seeds of some of the best annuals now for transplanting in spring. It is best to sow in pans or boxes in a cold frame, pricking out the seedlings into other receptacles as opportunity affords during late winter and early spring. When the weather is favourable in late April they may be put out in beds and borders, and will afford an excellent early display. Larkspurs, Clarkias, Godetias, Sweet Peas, and Chrysanthemums of the "Star" set are some of the most suitable for present sowing.



Allotments.

THE prolonged drought has had a marked effect on winter greens, and their growth on the majority of plots has been anything but satisfactory. Late Peas and Beans have also to a certain extent suffered. However, as a compensation, potato blight is practically absent on the plots in Belfast, and if the crop is not so heavy as usual it is clean and sound. We have had better crops on the plots, but probably during no season have the benefits of allotments been more enjoyed. Large numbers of people took advantage of spending the evenings on the plots during the hot season.

STORING VEGETABLES.

The produce of an allotment can be made to last much longer if the crops are properly stored for the winter. Apart from the price of foodstuffs, vegetables are too valuable to be allowed to waste. Last month some hints were given on storing potatoes. Other vegetables will now be dealt with. Vegetables cannot, of course, be too fresh for use. But in some cases where the crop would spoil by being left in the ground, when properly stored the freshness can be preserved and the crops easily available for use when the ground is frozen. In all cases care should be taken when lifting crops to be stored, and particularly so in the case of Beet. Another advantage gained by lifting and storing the crops—the ground can be dug, instead of leaving this all-important operation until the spring.

CARROTS.—The crop should be lifted about the end of October or beginning of November. To avoid breaking the roots the ground should be loosened with a fork and the tops pulled at the same time. The leaves should be cut off fairly close to the crown. The roots can then be stored in sandy soil in a shed or any cool place. They may also be stored on the plot and covered over with turf.

PARSNIPS.—This crop keeps best in the ground, and the roots have a better flavour when newly dug. A few can be lifted and stored the same as Carrots, and the remainder of the crop lifted when signs of growth appear in the spring.

BEET.—Beet should not be allowed to get frozen in the ground or the roots may be ruined. When the crop is left in the ground the crowns should be covered over with litter or leaves. When lifting the crop great care should be taken not to injure or break the roots, and the tops should be twisted, not cut, off. They may then be placed in layers with the crowns outwards, and covered over with soil sufficient to keep the frost from the roots.

SWEDE TURNIPS.—Part of the crop may be left in the ground. It is advisable, however, to lift the crop. The roots can be stored in a similar manner

to Potatoes, and covered with straw and soil. The heap should be turned occasionally, and the leaves cut off, which are almost certain to grow no matter how cool the heap is kept.

KOHL RABI.—Where this crop is grown it may be stored as advised for Turnips. Kohl Rabi is very hardy.

SALSIFY.—Quite a number of plottolders have grown this crop during the year. The roots keep best in the ground, and may be lifted as required. These same remarks apply also to Jerusalem Artichokes.

GENERAL WORK.—As the crops are removed, dig over the vacant ground and place the refuse, such as leaves of Cauliflowers, &c., in the bottom of the trench when digging. Weeds should be prevented from seeding; otherwise they will be a source of trouble. The seeds will commence to grow when the plot is sown again in the spring. Autumn-sown Cabbages should be planted now, if not already done. It is a mistake to allow the plants to become leggy by overcrowding in the seed bed. Continue to earth Celery up as the plants require more soil. Celery is, of course, quite hardy, but the methods adopted for blanching the stems reduce the vitality of the plant. Dry fern is an excellent covering for the trenches in very wet or frosty weather, and will help the plants to resist decay. Seedling plants of Cauliflowers and Lettuce may be planted closely together in frames, or choose a spot on the plot which is protected. The whole of the crop of the Potatoes should now be lifted and stored as advised in these notes for September. The tubers should be exposed to the light as little as possible. Sets that are to be planted next year may, however, be greened if desired. The stocks of Onions and Shallots should be examined. Any which show signs of decay should be removed. A few plottolders grow Tomatoes in frames. If the fruits are gathered and hung in a warm place they will ripen fairly well even if they are green when gathered. Where Garlic is grown it may be planted this month if the soil is in good condition. If not, it is better to defer planting until the spring.

THE FLOWER BORDER.—Geraniums, Dahlias, and other plants which will not stand the winter should be lifted. Dahlias will keep in a shed if covered over with dry leaves or litter. The Geraniums should be potted into small pots and kept dry at the roots during the winter. The hardy herbaceous plants should be cut down. Weak plants or special kinds may be protected with cinders, and marked with a stick. Annual plants should be pulled up, and the ground dug. The flower border is often neglected in the way of manure, and a plentiful supply should be forked in to get the best results. The border may then be planted with Wallflowers and edged with Forget-me-Not. When these are planted a few Tulips, Daffodils, and Crocus may be planted. This is the method we adopt, and the display is much admired in the spring.

G. H. O.

Bell's Non-bleeding Beet.

THIS is a really good variety of a popular vegetable, and should be widely known. Grown under normal conditions, it forms medium-sized roots of nice shape, flesh a rich dark crimson colour. The term non-bleeding is not misapplied, as broken roots cooked in the usual way retain their colour quite well. Although there is no excuse for carelessness in lifting, it is satisfactory to know that damaged roots may be used.

GARDENER.



October The Month's Work.

Southern and Western Counties.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

BEFORE frost puts an end to the display of flowers, notes should be taken of any improvements or alterations that may be desirable for next season. The most pleasing effects in colour blending, or contrast, should be noted with a view to their future employment, whilst combinations that have not proved happy should be avoided in future.

This month and November are most suitable, should weather permit, for altering or re-planting herbaceous borders, and the earlier it is done now the better, so that new roots may be formed before the soil becomes too cold. Most of the hardy herbaceous plants may safely be planted in autumn, but such as the choicer Phloxes and perennial Lobelias are best left alone until spring. In re-planting Michaelmas Daisies, Heleniums, and the like, it is best to make use of quite small pieces detached from the outside of the old stools, the worn-out middle portions of which should be thrown out.

In the formal flower garden all tender plants that are wanted for next season should now be taken up and potted. Begonias should be taken up and stored in sand in a frost-proof shed, and Gladioli should be tied up in bundles of each variety, which must be hung up in an airy shed until the tops have withered, when the corns may be detached and stored in boxes for the winter.

There is still time to put in cuttings of Violas, Calceolarias, and Pentstemons in cold frames as advised last month.

As soon as the flower beds are cleared they should be dug over and re-planted with Wall-flowers, Polyanthus, Myosotis, Alyssum, and bulbs for the spring display. Afterwards the lawn should be mown finally and edges trimmed, making all neat and tidy for the winter. A selection of shrubs planted for their autumn foliage effect adds greatly to the interest of the October garden. Many of the Japanese Maples, besides being very lovely in the spring, may at this season be compared with masses of scarlet flowers, their colouring is so brilliant. To name a few others, *Euonymus alatus*, *Berberis Thunbergii*, *Pyrus arbutifolius*, *Spiræa prunifolia* and *Liquidambar* are all beautiful at this season. Particularly gorgeous at this season is the Scarlet Dogwood planted at the edge of pond or lake, where its bare red shoots will maintain a pleasing effect all winter.

THE FRUIT GARDEN.

The late-keeping Apples and Pears are fast approaching maturity, and must be closely watched

with a view to gathering them at the right time. Seldom have we experienced a season giving such a uniformly good crop of all varieties as this year, exceptions here being Hambling's Seedling and Grenadier—usually two of the most reliable varieties. Cox's Orange Pippin is unusually fine, both in quantity and quality, and Allington Pippin is equally good. Amongst cooking varieties Tower of Glamis, The Queen, and Warner's King are unusually good.

Bush fruits may now be transplanted. These usually occupy the same ground for some years, and as they are gross feeders, the site for them should be well prepared by trenching or deep digging, and enriched with some good manure. These should be planted with a view to being able to protect them from birds, and to ensure this it is best to plant them in squares by themselves rather than dotted about amongst orchard or standard trees. They should be placed at least six feet apart each way, and made firm in the soil.

Wall trees that have made excessive growth during the past season may now be either root-pruned, or lifted and replanted, according to age and size. In root-pruning, a trench is taken out in a half-circle at three feet distant from the trunk. All strong roots outside this radius are severed with a sharp knife as the work proceeds, and the excavated soil is afterwards replaced and trodden firmly into position again. Any moving that has to be done amongst wall trees should be carried out before the leaves turn yellow and fall, because if the foliage can be retained for a week or two after replanting, new roots will quickly form, and the trees may be expected to carry a fair crop the following season. To do this successfully great care must be taken to preserve all the fibrous roots, and to replace these at their proper level when replanting. A little good soil containing leaf mould may be placed in immediate contact with these roots to encourage root activity; but it is not advisable to add too much rich material except in the case of older trees that have exhausted the soil.

Newly-planted Strawberry beds should be hoed over at intervals, and all runners removed. Older beds should have been cleaned of all rubbish and withered leaves to enable the crowns to become well ripened. There is still time to plant new beds, but unless these are got in under exceptionally favourable conditions they must not be expected to fruit well next season. They will, however, provide an early supply of runners, and will in this way well repay good treatment.

THE VEGETABLE GARDEN.

The main crops of Beet and Carrot may now be lifted and stored in sand for the winter. Great care must be exercised in the case of Beetroot, as if the roots are injured they will "bleed" and become worthless.

Main Crop Potatoes also must be lifted and stored at the first opportunity. Those required for use before Christmas may be brought into the store, but the latest kinds will keep in much better condition in clamps in the field. These should be lined with good straw and covered with a good depth of earth to make them rain- and frost-proof. If sprouting boxes are to hand, it is distinctly preferable to select the "seed" for next season when the crop is being lifted, rather than having to rely on tubers which have been weakened by sprouting in the store or pit. Store the "seed" in a light, airy shed which is frost- and rat-proof.

Cauliflowers sown last month for the earliest supplies next season should now be ready to transplant or prick out into a cold frame or some position out-of-doors where protection can be afforded them during severe weather. They must on no account be coddled, but should be encouraged to make slow and sturdy growth which will not be adversely affected by the chill winds of April, when they will be planted out in the garden.

The earthing of Celery should be completed by the end of this month. Choose a dry day for this work, and give a good dressing of lime or soot to ward off slugs before adding fresh soil to the plants.

Endive should now be lifted and closely packed into cold frames, where a portion at a time may be darkened and blanched ready for use.

A further planting of spring Cabbage may be made during this month. These will follow on after those planted last month, and will carry on the supply until the first spring-sown batch is ready for cutting.

Continue to ply the hoe between crops of Savoys and other winter greens, and remove the bottom and discoloured leaves from Brussels Sprout plants to encourage the sprouts to mature.

Midland and Northern Counties

By W. ROBERTS, Gardener to Lady Emily Bury,
Charleville Forest, Tullamore, King's County.

THE FRUIT GARDEN.

APPLES and PEARS as they become fit require to be gathered in and stored, selecting those that fall easiest first, and in all cases leave them on the trees as long as it is reasonably safe to do so, as I find they colour up and keep much better. Apples at present are almost a drug on the market compared with the last few seasons, and it behoves any one with any to dispose of to select and store the soundest and best fruits for later use, using those damaged in any way and inferior fruits first. Preparation for the planting, lifting, root-pruning, &c., of all fruit trees should be made and begun as soon as convenient, as the work is much easier and better done at this time of year before the ground gets sodden. It is a great advantage to have a good heap of soil, such as old Tomato soil, leaf mould, &c., got together and mixed in some open shed, and a barrowful or so will be found very useful at either operation. Keep the hoe going amongst newly-planted Strawberries, make good misses, and see that none get loose in the ground; keep runners, &c., off older plantations and mulch where not already done.

FRUIT HOUSES.

Late vineries with fruit hanging will require careful attention to ventilation and atmospheric conditions, and also to decayed berries, &c. Plenty

of air at all times except during wet or fog, with a gentle heat is, of course, the ideal condition; but where the latter is not available a little less air and, if possible, drier conditions are the best. Peach houses, both early and late, are best kept fully open, and if still carrying foliage an occasional drenching with hose or syringe will benefit, and care should be taken that borders do not become dry. Any lifting, root pruning, &c., is best performed before the leaves are quite all off, and if, when finished, the house is kept a bit closer and the trees syringed several times daily, the prospects of a crop next season are very much improved. Tomatoes in late houses require much the same treatment as recommended for late Grapes, with rather more artificial heat if possible, and of course drier conditions of the roots; and the same applies to late Melons, which, by the way, have done very well this season owing to the amount of sunshine we have had. I have not seen any records *re* the latter, but would think it should compare very favourably with a long period.

THE KITCHEN GARDEN.

Let there be no delay lifting all Potatoes, as everything is against leaving them longer in the ground. If sheds are available they can be placed under cover and sorted later during bad weather; otherwise, place in heaps and cover as best you can. A little straw and sheets of corrugated iron make a capital temporary arrangement. Beetroot should also be lifted and stored in sand. This requires careful handling, and is very easily damaged by frost on some soils.

Continue to earth up Celery during dry weather. Where it is intended to have Rhubarb and Seakale fit for use by Christmas, a start should be made at once by lifting a few crowns and stools; the latter are best when left exposed for a few weeks before required. A second plantation of spring Cabbage should be made at once to enable the plants to become established before frost sets in. Select good, firm ground, but do not apply fresh manure, as it does more harm than good by making them grow soft and unable to stand the winter. Those put out last month may be lightly moulded up if large enough. If not, keep the soil stirred between rows until they are. Remove Lettuce, Cauliflowers, &c., to cold frames or sheltered places for early spring and summer supplies. Burn all refuse on vacant plots.

THE FLOWER GARDEN.

Lift Begonias before frost damages them. Spread them out in some cool house or frame, and when the stems drop off store them in any dry frost-proof shed, mixing some dry bog-mould or sand among them.

Geranium and other cuttings should now be removed indoors; give plenty of air and keep on the dry side. A good many old plants may also be lifted and placed in pots or boxes. Shortening the shoots will be found very useful for stock purposes. Wallflowers, Myosotis, and innumerable other subjects, also Bulbs, may be planted out as the summer bedding begins to look unsightly; borders and shrubberies to be kept cleaned up as they die down, and any alterations noted for next season. Leaves will now become troublesome on lawns and pleasure grounds, and should be cleaned up, though I have met those who like to see them on the walks, &c., for autumnal effect. The trouble is that they will not stay where you want them. Be prepared to protect any delicate shrubs, and attend to any faulty supports or stakes in anticipation of usual winter gales and cutting winds.

BEE-KEEPING MADE PROFITABLE

Every Bee-Keeper who desires success should read

THE IRISH BEE JOURNAL

(ESTABLISHED 1901).

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Office—53 UPPER SACKVILLE ST., DUBLIN

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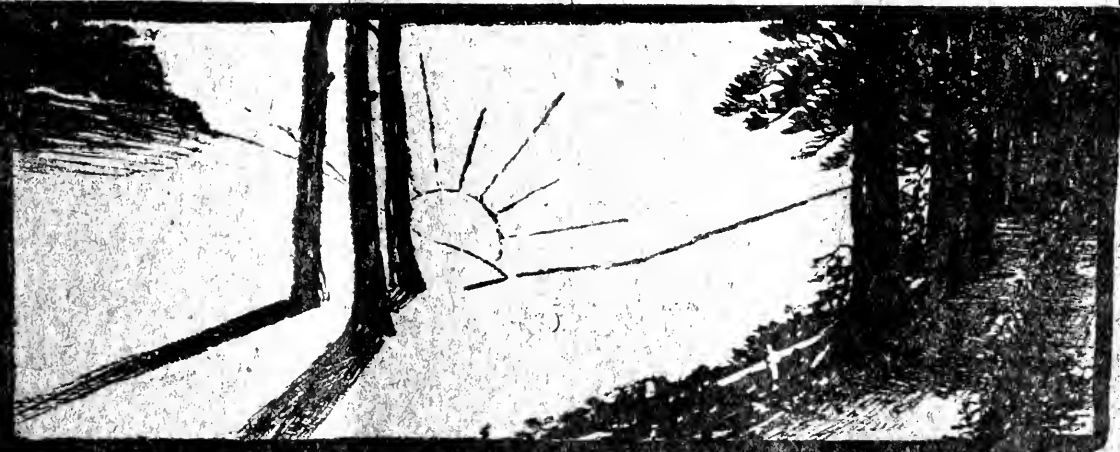
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Irish Gardening

Contents

	PAGE		PAGE
Notes on Native Ferns and their Cul-		Allotments	174
tivation	161	Plants in Rooms	175
A Selection of Flowering Shrubs for		<i>Polygonum vacciniifolium</i>	176
Planting now (Illustrated)	163		
Cottagers! Grow your Own Apples .	167	The Month's Work--	
Herbaceous Plants (Illustrated) . .	168	The Flower Garden	175
The Rose Garden	171	The Fruit Garden	176
Abstracts	172	The Vegetable Garden	176
Woolly Aphis, or American Blight .	174	<i>Embothrium coccineum</i>	176



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IRISH GARDENING

VOLUME XIV
No. 165

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

NOVEMBER
1919

EDITOR—J. W. BESANT.

Notes on Native Ferns and their Cultivation.

By R. LLOYD PRAEGER, B.A., B.E.

I HAVE read with much interest the articles by H. C. D. on " Fern Growing " which recently appeared in this journal, and they have set me thinking about a group of plants which are very old favourites. I well remember how, at the age of fourteen, spending a summer month at

ing and long days spent Fern hunting—chiefly in Ireland, with that veteran Fern lover, W. H. Phillips, of Belfast, and also for one glorious fortnight in Devonshire with E. J. Lowe and Col. A. M. Jones.

The British Isles are not rich in Ferns as com-

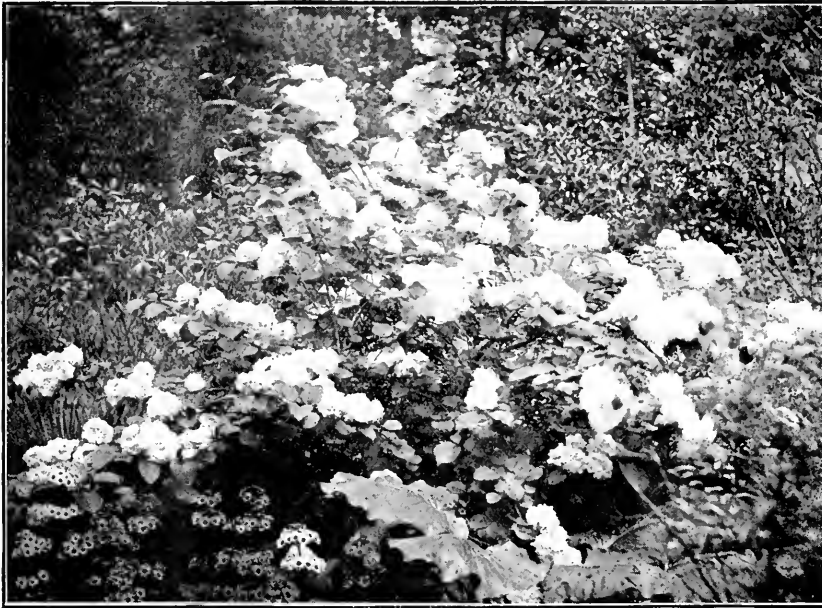


Photo by]

VIBURNUM TOMENTOSUM PLICATUM
at Mount Usher, Co. Wicklow.

[W. E. Treerithick

Ambleside, my mind was torn by the rival attractions of fishing and of ferns—both of which force themselves on one's attention in that delectable region. I decided then in favour of Ferns and never have regretted my choice; so far as the British species are concerned, I have been ever faithful to my first love. If I now inflict some rather casual notes on the readers of IRISH GARDENING, I must plead in excuse the pleasure it gives to recall early experiments in Fern grow-

pared to many warmer and damper regions. Some 44 species are found in our islands, of which 33 are Irish. But at the same time the native Fern flora is varied in composition, containing examples of most of the sections into which the Fern world has been divided by botanists, and including, in the Royal Fern, Moonwort and Adder's-tongue representatives of some of the most ancient races of Ferns now left upon the globe. In studying our native

Ferns, then, we are dealing with a fair representation of the Fern population of the earth.

Again, viewed from the point of view of cultivation, our Ferns offer a very varied assortment. They include species like the Killarney Fern, requiring continual shade and great moisture; plants of dry walls, like the Spleenworts; lime-lovers, like the Limestone Polypody; lime-haters, like the Hard Fern; swamp plants, like the Marsh Fern; pasture plants, like the Adder's-tongue. The Sea Spleenwort is found within the influence of salt spray, though this spells death to most Ferns; the Woodsias are confined to alpine rocks. There is plenty of opportunity for the clever cultivator.

However, Ferns as a whole are certainly singularly easy plants to grow, and the native species *as a whole* are no exception to the rule; but a few are more difficult. How often does one see a healthy plant of the Sea Spleenwort save on its native rocks? The problem of growing this Fern is one to which I have no solution to offer. I have tried all sorts of treatment with plants obtained with their root system complete (generally no easy thing)—planting in rock-chinks, watering or spraying with slightly salt water, growing it damp, growing it dry, or in deep shade, or in full sun; sometimes it lived, more often it died. I tried raising it from spores, but no plants appeared. Perhaps some of my readers can enlighten my ignorance as to its requirements. Near the sea it grows naturally in all kinds of situations—in semi-darkness in caves, as at Howth; on the stern-swept, dry walls of the old church on St. Patrick's Island, off Skerries; and I remember glorious tufts, a yard across, bearing a couple of hundred fronds over two feet in length, in shallow hollows of flat rocks near Castletown Berehaven, fully open to the summer sun.

That a salty atmosphere is not altogether essential to its growth is shown by its occurrence beside the Upper Lake at Killarney—one of the very few inland localities known; yet a mild climate such as prevails there cannot be reckoned as replacing the maritime conditions in a general way, for in still milder climates, such as those of Madeira or Bermuda, it is found by the sea, and, so far as I know, confined to the coast. In cultivation close, moist conditions undoubtedly offer the best chance of success.

Another difficult plant is the Moonwort, *Bolrygium lunaria*. It is native on heathy ground, and is not by any means so rare as is often thought, being easily passed over. Plants carefully dug up, with a good ball of peaty loam undisturbed, have lived for one or at most two seasons. But so many of these heath

plants are semi-parasites or saprophytes, or dependent on the continued activities of some mycorrhizic fungus infesting their roots, that one is inclined to suspect some difficulty of that sort in connection with the rather mysterious Moonwort.

Its ally, the Adder's-tongue, *Ophioglossum vulgatum*, gives no trouble, though existing naturally under similar conditions. As in the Moonwort, the plant consists of an annual underground bud surrounded by a bunch of fleshy roots. Dug up with a ball of loam round it, it forms an easy pot plant. I have grown plants for ten years.

The Parsley Fern, *Cryptogramme crispa*, is a trouble to many people, though occasionally a fine clump may be seen on a half-shady rockery. On the Irish mountains, where the plant is curiously rare and stunted, it is found in rock-chinks; but in the English Lake District it grows like grass. It is worth noting, however, that even there it chooses its habitat carefully. It is seldom seen quite in the open, but delights to grow fringing a boulder, with its crown tucked away far in under the stone, beyond the reach of excessive heat or cold, drought or wet. *Verbum sap.*! But even on open rockwork in half shade one may often see a good clump in cultivation.

The well-known Killarney Fern (*Trichomanes radicans*) and its relatives the two Filmy Ferns (*Hymenophyllum tunbridgense* and *H. unilateralis*), which are naturally plants of deep shade and moist rocks, offer no difficulties when these conditions are given them; but one often sees them grown under an excess of moisture and shade, giving the plants an unnatural and less interesting appearance, and making them limp and barren. Planted in humus and stones without a bell-glass in a moist frame, protected from frost, they grow compact and crisp, and bear in abundance their interesting little urn-shaped fruit-vessels. In the garden of Sir John Ross of Bladensburg, at Rostrevor, a couple of small plants of the Killarney Fern have been grown in a damp corner in the open for some years, and though they have not made much of it, yet they have not been killed.

There is one interesting point about *H. unilateralis* which is not, I think, generally known—that it can on occasion continue for several seasons growth from the tip of the frond, as the climbing Ferns do. I got fronds to continue growth in this way for four successive seasons, the fronds being eventually nine inches in length.

The Maidenhair (*Adiantum Capillus-Veneris*) is dependent, I think, solely on the absence of frost: if that can be secured, the plant may be grown in a chink in the open. Its abundance

and luxuriance on the limestone pavements of Clare show sufficiently that it fears neither wind nor a certain amount of sun.

With the Hard Fern (*Blechnum Spicant*), which is so often brought into the garden only to die, the case is very simple. Alone among British Ferns, it cannot endure lime. Give it a lime-free soil, and it offers no difficulty.

While a good many of our native Ferns—the Oak Fern, Beech Fern, Mountain Buckler Fern, and Green Spleenwort, for example—favour mountain regions, five species—the Alpine Polypody (*Polypodium alpestre*), the two Woodsias (*W. ilicensis* and *W. hyperborea*), the Holly Fern (*Polystichum Lonchitis*) and the Mountain Bladder Fern (*Cystopteris montana*) are really alpine in habitat, being confined to the higher mountain ranges of Wales, the Lake District, or Scotland—the Holly Fern alone occurring in Ireland (west coast from Donegal occasionally to Kerry). All of these are quite amenable to cultivation in the open, and offer no difficulty.

Only one British Fern is a true swamp plant—the Marsh Fern (*Lastrea Thelypteris*). It likes ground as wet as it can get it, and in many places its creeping rhizomes are under water for half the year. But in the garden it demands no exceptional treatment. Indeed, in my rock garden a bit of it appeared among *Anthyllis montana*, a hairy plant of Mediterranean type requiring abundance of sun and drainage, and accustomed at home to semi-desert conditions. This ill-assorted pair grew together amicably in a very dry spot for years, till at last an exceptional drought was too much for the Marsh Fern.

A Selection of Flowering Shrubs for Planting now.

SHRUBS are so numerous nowadays that the beginner is apt to become confused in trying to make a selection.

It depends entirely, of course, what object is in view when the selection is being made. It is quite possible to choose all evergreens, and yet have a great variety, if the position requires evergreens; or the aim may be to get a fine colour effect from the leaves in autumn, in which case the species chosen need not necessarily be remarkable for their flowers. Fruits, too, and coloured shoots are not always produced by the shrubs with the most attractive flowers.

The following, however, are chosen for their flowers, though some bear attractive fruits, and have good autumn foliage:—

Abelia floribunda is a most attractive ever-

green species from Mexico, but requires the shelter of a wall in all but the most favoured parts of Ireland; nevertheless, the long, pendulous, tubular, rosy-red flowers are most attractive, and it is worth a place on a wall where many less worthy plants are often accommodated.

Abelia chinensis is quite hardy, and is a most useful species, flowering throughout summer and autumn, the flowers being white and fragrant. It is partly evergreen, but loses many of the leaves in winter.

Berberis Darwini, a native of Chili, cannot be omitted from any selection of flowering shrubs. In addition to being evergreen, it produces in April and May abundance of golden-yellow blossoms of rare beauty. This species often bears a good crop of blue berries in autumn, which afford a ready means of propagation.

Berberis stenophylla is a hybrid of *B. Darwini* and a small species called *B. empetrifolia*. It is by many considered the finest of all the Barberries, and is certainly a magnificent flowering shrub. Forming a mass of slender shoots furnished with small leaves, a well-grown plant makes a striking picture in April and early May when densely covered with beautiful deep yellow flowers.

Buddleias are useful late summer and autumn flowering shrubs, and should be pruned hard back in spring. The most useful for general planting are the selected varieties of *B. variabilis*, which, according to some botanists, should be called *B. Davidii*. Good soil is necessary, and free exposure to sun and air is essential, otherwise the long shoots are unable to support the terminal flower racemes. The best varieties are *B. variabilis Veitchiana*, *B. var. magnifica*, *B. var. ampla*, but new varieties are being raised from seeds, and improvements are likely to take place. All the best forms have flowers of shades of violet or purple.

Ceanothus is an American genus of evergreen and deciduous shrubs; of great value either for walls, beds, or borders. The evergreen species mostly flower in spring and early summer, and are excellent wall plants, though all may be grown in sheltered sites in the open in Ireland.

Ceanothus papillosus is one of the most attractive; very fine as a wall plant, but thriving in sunny, sheltered shrubberies. The leaves are warty on the upper surface, hence the specific name; and the flowers, produced in racemes, are a pleasing light blue.

Ceanothus thyrsiflorus is one of the stronger growers, reaching quite 15 feet in the open, and bears in June numerous clusters of blue flowers, a good bush making a fine show.

C. thysiflorus griseus, a variety with larger leaves and paler flowers, is equally vigorous in growth, but not quite so hardy, though flourishing in many parts of Ireland. Where there is room for only one, the former should be preferred.

Ceanothus Veitchianus, a supposed Cali-

cases are of great beauty. In very few cases are the flowers conspicuously showy, but *Cotoneaster multiflora* is well worth planting as a flowering shrub. As our illustration shows, the branches are pendulous, and when clothed in June with many clusters of white flowers the effect is very fine.



Photo by] COTONEASTER MULTIFLORA [W. E. Trevelick
in the Botanic Gardens, Glasnevin.

fornian species, is a shrub of the greatest merit, with attractive bright-green leaves, and bearing in early summer beautiful dark-blue flowers. It makes a beautiful plant on a wall, but in sunny positions, sheltered from cold winds, makes a handsome bush in the open, though an extra severe winter may damage it considerably.

Cotoneasters are now very numerous, and the genus as a whole is a very fine one. A large proportion of them are evergreens, useful in a variety of ways, while the fruits in many

Cydonia japonica in one or other of its many forms cannot be omitted from a choice collection of shrubs. Although well suited for growing against a wall, it flourishes also in the open, and enjoys abundance of sunshine. Many of the finest specimens we have seen receive practically no pruning, though in many instances summer pruning of the young growths, after the manner of treating apple trees, is beneficial. The flowers are produced in clusters, and are usually large and showy, varying from pure white to deep scarlet. The variety *nivalis* has

pure white flowers, and *Knaphill Scarlet* deep crimson, while many intermediate shades are offered by nurserymen.

Cytisus is the botanical name of the Brooms, a family of much importance among flowering shrubs. Apart from the prostrate species and hybrids more suitable for the Rock Garden, the best for general planting are *Cytisus albus*, the

Daphnes are ever popular, and none is more to be recommended for general planting than the common "Mezereon" *Daphne Mezereum*, with purplish-red flowers, very early in the year.

There is also a charming pure white variety, and one with deeper-coloured flowers than the type.



CUT SPRAYS OF CYDONIA JAPONICA.

white Broom, a plant of rare effect when wreathed in its pure white blossoms in May. *C. Dallimorei*, a beautiful hybrid, with rosy-pink flowers of great beauty; *C. præcox*, another hybrid, with pale yellow flowers, and *C. purgans*, with rich, deep yellow flowers.

C. Scoparius, the common wild Broom, is well known and admired, and has given rise to numerous desirable varieties, among them being *sulphureus*, often called the Moonlight Broom, a rather low-spreading form, with sulphur-yellow flowers; and *C. Scop. Andreanus*, a striking variety, with flowers a fine combination of yellow and rich crimson.

Diervillas are still commonly known as Weigelia, but the former name is correct. The wild species are now largely superseded in gardens by named varieties or hybrids. They are summer flowering shrubs, the flowers being born on shoots of the previous year. Among the more desirable are *Era Rathke*, dark crimson; *Abel Carrière*, rosy crimson; *Conquête*, deep pink; *Madam Lemoine*, white, becoming pink later; *Floreal*, soft rose; *Bouquet Rose*, satiny rose flowers, and many others.

Escallonias are excellent shrubs, mostly evergreen, and free flowering. Where only a limited

number can be grown the best are *E. langleyensis*, flowers rosy carmine; *E. edincensis*, with larger flowers, paler in colour; and *E. Donald Seedling*, an attractive shrub, flowers white, suffused pink.

Forsythias are always admired, flowering, as they do, in March and April. *F. suspensa*, with its long, slender shoots, is an eminently graceful shrub, and bears abundantly its golden yellow flowers. A magnificent form, of recent introduction, is *F. suspensa Fortunei atrocaulis*, with strong, stiff shoots, which are dark purple in colour, and bear beautiful, large, clear yellow flowers.

F. intermedia densiflora and *F. intermedia spectabilis* are two free-flowering shrubs of exceptional merit, and ought to be included where possible.

Genistas are allied to *Cytisus*, and, like the latter, enjoy the common name of "Broom." In some cases, however, they make larger specimens, and one or two are useful for late flowering.

G. aethnensis, the Mount Etna Broom, grows into a large specimen, over 15 feet high, but should be well cut back for several years after flowering or in spring, to keep it bushy as long as possible, the tendency being for it to become leggy and wind-smashed. The flowers are produced in July.

G. cinerea grows up to 10 feet, forming leafy twigs, and bearing clusters of yellow flowers in summer.

G. tinctoria elatior is a desirable variety of the common Dyer's Greenwood, and grows 3 to 4 feet high, bearing in late summer and autumn terminal racemes of yellow flowers.

G. virgata is a useful species, thriving in thin woods and half-shady places, though quite happy in full sun. It will grow up to 10 feet high, and bears short racemes of bright yellow flowers from July onwards.

Hydranged paniculata, and its sterile form, *grandiflora*, are desirable autumn flowering shrubs, rejoicing in rich soil. The immense inflorescences of white flowers terminate the current year's growth, hence the shoots should be pruned back in spring.

Magnolias are among the choicest of flowering shrubs and trees. The many forms of the hybrid *M. Soulangiana* are all of merit, and make a fine show in April if lucky enough to escape spring frost. The flowers are large, white, stained on the outside of the petals with purple, the colouration varying in depth in different forms; some of the best offered in catalogues are *Norberti*, *Speciosa*, and *Alexandrina*.

Where space is limited, and only one Magnolia can be grown, *M. stellata* has much to

recommend it. The flowers are pure white, freely produced when the plant is doing well. It should be planted in shelter, and shaded from the morning sun, as frosts in the end of March and early April frequently ruin the display.

Olearias are fairly numerous in gardens, but for general planting, *O. macrodonta*, with large, prickly margined leaves and corymbs of white flowers; *O. Haastii*, small oval leaves, and corymbs of white flowers in August; and *O. stellulata*, with longer, narrow leaves, and pure white flowers in April, are most to be recommended.

Philadelphuses, so commonly called "Mock Oranges," are general favourites, and here again, where space is limited, the hybrids are generally to be preferred to the wild species, as many of them are less rampant in growth, and may be kept to reasonable limits by annual pruning, yet continue to flower freely. Some useful and ornamental sorts are—*P. Lemoinei erectus*, *Aralanche*, *Bannière*, *Bouquet Blanc*, *Montau d'Hermine*, *Mont Blanc*, *Rosace* and *Voie Lactée*; all have white, or creamy white, flowers, and often semi-double.

Prunus is the botanical name of the Plums, Cherries, &c., and many charming plants are contained in the genus. Confining ourselves to the more or less shrubby species, the following can be recommended:—*Prunus triloba fl. pl.*, bearing charming double pink flowers on shoots of the previous year in early April; *P. japonica fl. pl.*, in both pink and white, in April; *P. tomentosa*, bearing innumerable white pink-tinted flowers, in March; *P. subhirtella* and *P. microlepis* are both delightful species, flowering abundantly, but eventually becoming small trees.

Pyrus is well known as the botanical name of the Apple. Not many of the species can be called shrubs, but *P. nigra* has white flowers in May followed by black fruits in autumn; in addition, the leaves take good autumn tints.

P. floribunda, *P. schiedeckeri*, *P. Toringo*, and others form small bushy trees, and are of great beauty, where space can be spared for them.

Spartium junceum, the Spanish Broom, is invaluable in all gardens; its clear yellow flowers produced in succession for many months in summer and autumn. It must be pruned well for a few years or it becomes leggy, and requires staking.

Spiraeas are legion, but a few only of the best are required in most gardens. The following are recommended:—*Spiraea arguta*, bearing abundance of pure white flowers in early spring; *Sp. Atchisoni*, long, feathery plumes of white flowers, in August; *Sp. bracteata*,

round clusters of white flowers, in June: *Sp. discolor*, a tall, branching shrub, with plumes of creamy white flowers, in July and August; *Sp. japonica* Anthony Waterer, with flat corymbs of carmine flowers in August and September; *Sp. prunifolia* fl. pl., double white flowers in April; and *Sp. Van Houttei*, a vigorous leafy shrub, bearing clusters of white flowers in June.

Syringa is the little-known botanical name of the Lilacs. Some of the wild species are attractive, but for the average garden the named varieties, now so numerous in nursery catalogues, are best. The following is a selection:—Single flowered, *Marie Legraye*, white; *Leon Simon*, rose; *Reaumur*, dark reddish purple; *Pasteur*, large flowers, wine red. Double—*Mad. Casimir Perrier*, creamy white; *Mad. Lemoine*, white; *Charles Sargent*, violet mauve; *Edouard André*, rose; and *Victor Lemoine*, lilac-mauve.

Viburnums are numerous, but the best for general planting is *V. tomentosum plicatum*, which, as shown in our illustration, is a shrub of exceptional merit, bearing numerous trusses of pure white flowers in June or early July.

B.

Cottagers ! Grow Your Own Apples.

Now, that planting time for all classes of fruit trees and bushes is at hand, a few words of advice to cottagers and owners of small gardens may not be amiss, especially to those who look upon fruit as an essential article of diet; and I think it is quite recognised that the general public now thoroughly realise that fruit, and especially apples, are a valuable, and should be an economical, food. I add the foregoing remark in case some one should quote me market prices for first grade fruit; and certainly the prices of late years have been almost prohibitive except to those blessed with ample means. Hence my advice—Grow your own Apples.

It matters not how small your garden is if the proper class of tree is planted.

Many times, of late years, I have been asked by allotment holders and owners of small gardens to advise them about the planting, pruning, &c., of fruit trees, and almost invariably I found that small gardens had been planted indiscriminately with standard or half-standard trees, with the result that in a few years practically half of the ground was rendered useless for the cultivation of vegetable crops.

Now, I should like to say a word in favour of espalier and cordon-trained Apple trees; these,

properly planted and well looked after in regard to pruning, training, &c., are both decorative and useful. They take up very little room in the garden, are easily trained, pruned, and sprayed, and all the work can be done without the aid of a ladder. Assuming that the garden to be planted with espalier and cordons is devoid of walls or wire fences, all that is required is a few well-seasoned oak posts, about 7 feet long, and a roll of ordinary fencing wire.

It matters not whether the garden is round, square, or oval; knock in the posts 4 yards apart and 2½ feet in the ground, all round the garden, leaving, say, two or three open spaces for convenience in getting in and out of the vegetable garden.

After the posts have been "well and truly planted," all that is necessary is to drive in strong staples in the posts every 12 inches, then draw a length of wire through each staple, and by means of a few wire strainers draw quite taut. The trees may now be planted.

I am in favour of planting both espalier and cordon trained trees, so I should plant, say, one half with espalier and the other half with cordons.

The espaliers, owing to their having more room for top growth than single cordons, live to a greater age, and continue to bear good fruit long after a single cordon is exhausted. On the other hand, cordons come into full bearing much sooner than espaliers, and remain in a fertile condition for quite a number of years. It is, of course, essential that the trees have the advantage of light and sunshine, and to be successful the ground must either be naturally or artificially drained; boggy ground is fatal to Apple trees, and it is hopeless to try to grow Apples under overhanging trees or smothered up with tall, herbaceous plants and such like. A narrow border, 2 feet wide, should be kept on either side of the espalier, which may be utilised for growing dwarf flowers, or vegetables, such as lettuces, radishes, &c.

Single cordons may be planted obliquely to give as much top growth as possible, and should be planted 2 feet apart.

Espalier trained trees should be planted from 12 to 15 feet apart.

If the soil is fairly good, deep digging or trenching is all that is required; no animal manure should be added, and the roots should be carefully spread out and covered to the depth of about 6 inches and well firmed, when the soil is workable, by treading or ramming.

If the soil is very poor, holes about 3 feet wide and 18 inches deep should be taken out and filled in with some chopped turf or roadside parings, to which may be added a few handfuls of bone meal. Two important things for the novice to be careful about are to firm the soil

well round the roots and to avoid deep planting.

I shall not enter into the details of pruning, training, spraying, &c., as it is almost impossible to instruct a novice in these operations without giving a practical demonstration, so the best plan is to get hold of a practical gardener, who is almost invariably eager and willing (free, gratis, and for nothing) to impart such informa-

Herbaceous Plants.

THE planting of herbaceous plants is work that can very well be carried out in open weather during the closing months of the year. The roots in many cases are active at this time, even though the stems may be dying down. Now is a good time to go through the her-

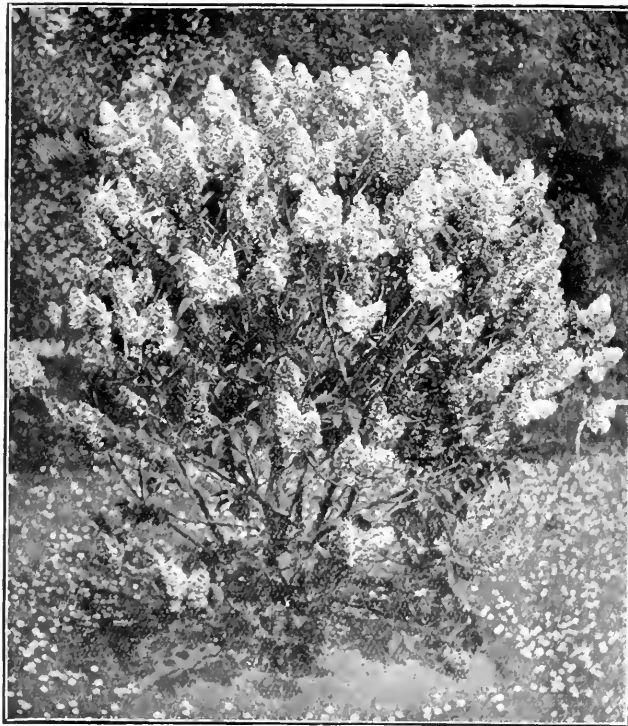


Photo by

LILAC-REAUMUR
Royal Botanic Gardens, Dublin.

[W. E. Trevelick

tion to anyone who is making a serious attempt to grow good fruit.

In conclusion, I shall name a few of the varieties which I consider to be first-rate for the particular form of training alluded to above. There are many other very desirable varieties, but these are fairly constant croppers in most parts of the country, and all are of good quality:—

Dessert Varieties:—Cox's Orange Pippin, Allington Pippin, Adam's Pearmain, Worcester Pearmain, King of the Pippins.

Cooking:—Gascoigne's Scarlet, Lady Henniker, Schoolmaster, Keswick Codlin, Norfolk Beauty.

B. G. J.

baceous borders—lifting, dividing, and replanting any single plants or groups which have been noted during the season as having become unsatisfactory. Some plants do not suffer disturbance gladly, and should only be lifted when showing signs of complete exhaustion: such are *Paeonias*, *Delphiniums*, *Anemone japonica*, *Gypsophila paniculata*, *Kniphofias* *Dictamnus*, and some others. In these cases it is better to keep the plants vigorous as long as possible by lightly forking in around them well-rotted dung, by giving soakings of liquid manure in the growing season, and in the case of *Delphiniums*, rigorously thinning out the weak shoots

in spring. In applying the manure now it is best to use a fork to loosen the soil round the plants, removing just enough to allow of the manure placed round them being lightly covered. Indiscriminate digging close to the plants with a spade destroys innumerable roots, rendering the application of manure futile. Many plants, on the other hand, are gross feeders, making a mass of fibrous roots and a large number of "crowns," or short winter shoots. Such are the tall *Michaelmas Daisies*,

but careless, haphazard planting creates a feeling of irritation quite foreign to the spirit of a garden. Aim, then, at having a perfectly free arrangement, with spring, summer and autumn flowering plants carefully placed, so that from March till October the border has a furnished appearance.

Those who have sufficient space, and can afford to plant seasonal borders, have, of course, a much simpler task. It is comparatively easy to pick out the plants which flower



GROUP OF DELPHINIUMS IN A BORDER.

Hebeiums, *Phloxes*, Sunflowers of the *multiflorus* set, the many varieties of *Chrysanthemum maximum*, some *Aconitums*, *Campanula persicifolia*, *Doronicums*, *Erigerons*, &c. All these are apt to form dense masses of shoots, and if not periodically lifted and divided, re-planting the strongest crowns, the flowers become small and the plants dwarfed, and hence do not give the display they are capable of. While this work is proceeding slight alterations may be made where certain combinations or contrasts have not been pleasing, and in adding plants or groups from time to time some parts of the borders may become more thickly planted than others, and a want of balance is noticeable in summer. Geometrical regularity is a thing to be avoided in a herbaceous border,

at any one season, and arrange them so as to form a beautiful picture, introducing all sorts of colour contrasts and harmonies, with grey-leaved plants as a foil. The gardener, however, who has to maintain one border in a blaze over as long a period as possible must use plants which are conspicuous for their flowers, and cannot afford many foliage foils. He has to bear in mind that the flowers of spring fade with the advent of early summer, and those of the latter season fail when the late summer and autumn flowerers are coming in and so on; hence, the skill required to keep one border gay has to be gained by experience. Happily, there is no lack of suitable plants, in fact, there are almost too many; so many new and improved varieties are continually coming out that

it is easy to get overcrowded, from the simple fact that superseded varieties are not discarded. It does not follow that all new varieties are improvements—tastes differ—and to put it mildly, we think nurserymen are often too sanguine, and might frequently rogue their seedling beds more rigorously, with advantage to themselves. However, in many cases nurserymen are only the vendors, and many sterling novelties were raised by keen and clever amateurs and professional gardeners.

Without attempting to enumerate all the excellent plants available for the herbaceous border, it may be useful to look at a few of recent introduction.

Achillea Perry's Variety is an improvement on *The Pearl*, forming fine heads of pure white flowers, produced over a long season. It grows about 2½ feet high, and spreads somewhat freely.

Aconitum Spark's Variety was discovered by Mr. Maurice Pritchard, a very keen plantsman, and is an excellent plant, growing 4 feet high, and producing fine panicles of deep-blue flowers.

Anchusa "Dropmore" and *A. Opal* are not exactly new, but are such as should not be omitted, on account of their beautiful blue borage-like flowers in summer; both grow 4 feet high or more in good soil.

Aster Amellus, long a favourite in gardens, has given rise to numerous new forms of late years, and we now have a fine range of colours from plants, producing large heads. Some of the best are—*Amellus roseus*, *Beauty of Ronsdorff*, *Onward*, *fleur bleu*, *Riverslea*, *preziosa*, *Chas. Davis*, &c. The heights vary from 2 to 3 feet, and the colours through blue, mauve and pink.

Campanula persicifolia, the old peach-leaved Bellflower, has been wonderfully prolific of varieties. *C. persicifolia Xerry Giant* has been known for some years, but is not so often seen as it might be. The flowers are of great size, semi-double, and pure white, the plant growing 3 feet high.

C. p. Telham Beauty is of recent introduction, and bears large, single blue flowers. Numerous others of Continental origin have very large flowers, and are distinct advances on older varieties.

Chrysanthemum maximum Etoile D'Aurors is not new, yet strangely little known in gardens. Of stout habit, producing enormous flower-heads, without any trace of grossness, and growing 4 feet high, it far outclasses Mrs. C. L. Bell, and is easily the finest of the "maximum" set.

Delphiniums are now so numerous that to make even a selection of what one might consider the best would fill pages of IRISH GARDEN-

ING. A good selection is given at page 123 of the August issue of this Journal, and any specialist's catalogue will provide many more.

Echinacea purpurea, Perry's variety, and *E. p. Taplow* variety are two useful herbaceous plants, growing to a height of 3 or 4 feet, and producing fine, reddish-purple flowers, which give a distinct tone of colour in the border.

Erigerons have become popular of late years, and are valuable, coming in before the Asters, and flowering for a quite a long period. Among those of recent introduction, *Erigeron macranthus* is useful and striking, growing nearly 3 feet high, and producing abundantly fine bluish-mauve flowers. *E. Amos Perry* is of outstanding merit, flowering from early summer until the end of September, and even later; flowers large, violet-blue in colour.

Gentiana asclepiadcea is no new plant, but always a favourite with hardy-plant lovers.

G. a. Perry's variety is a robust form, with fine deep-blue flowers; and equally desirable is *Bowle's variety*, flowering over a long season.

Gem Mrs. Bradshaw, hardly to be reckoned new now, marked an era in the history of the "Avens" family, and is not yet surpassed. Producing abundantly large semi-double flowers, of a rich orange-red, on long, stout stems, it is one of the glories of summer.

G. Mr. Bradshaw is a rich yellow counterpart, and both should be included in every border.

Gypsophila paniculata flore pleno, the double variety of the popular "Gypsophila," is not new, but should certainly be planted for the fine, billowy effect of its numerous branching stems, bearing myriads of small white "balls," more effective than the single flowers of the type, but by some considered less elegant for cutting.

Helium Rirceton Beauty is an exceptionally fine variety of the old *H. autumnale* and grows 4 or 5 feet high, producing masses of large, golden-yellow flowers in early autumn, and continuing in beauty till late in the year.

Helium Rirceton Gem is similar in growth, but bears beautiful orange-crimson flowers of rare effect. It is a vastly improved form of the old *H. aut. striatum*.

Helianthus Miss Mellish and *H. sparsiflorus* are tall "Sunflowers," of great merit in late autumn. Both grow 6 feet high, the former producing large, golden-yellow flowers and the latter abundance of smaller flowers of clear yellow.

Helianthus rigidus, a very old plant, is still one of the best, growing about 4 feet high; producing innumerable clear yellow flowers, of great value for cutting.

Irises have lately sprung into prominence,

and many beautiful varieties are now in commerce. They are not always successful in a thickly-planted herbaceous border, as the rhizomes do not get the sun they require to ripen them. Planted in borders by themselves, they make a great show in June, but they are best planted not later than September.

Heucheras, although to be had in many named varieties, we prefer to raise from seeds. Seedlings grow strongly, and produce sheaves of flowers on long, wiry stems, and make beautiful masses in the border. The best seedlings can be divided, and replanted in autumn.

Scabiosa caucasica Perfecta and *S. caucasica Diamond* are fine selected seedlings of the old Caucasian *Scabiosa*. Their light-mauve flowers are most effective in the border, and are invaluable for cutting.

Of popular florists' flowers, such as *Phloxes* and *Pyrethrums*, there is an abundant choice, but too much space would be required to incorporate them in these notes. Nevertheless, it will be seen that we have abundance of material to make a brilliant garden of hardy plants for nearly eight months in the year, and we have not enumerated one-half of them.

B.

The Rose Garden.

PLANTING ROSES.

DURING November, if the weather is suitable, Roses may be planted with every hope of success. The roots have still time to get a hold of the soil ere the coldest weather arrives, and plants put in now are likely to start away in spring better than those left to a later date. Roses like a fairly rich, retentive soil, but not so heavy as to be sour and cold. What gardeners call a medium soil of good tilth suits the majority of varieties: in fact, a well-worked soil, such as grows good vegetables, will not be far amiss for Roses of any kind. A good vegetable soil is one that has been deeply worked—at least two feet—and reasonably manured according to the crop to be grown. Every gardener makes his own soil, irrespective of what it may be at the beginning. If shallow and gravelly below he either removes the gravel to the required depth or he adds to the depth by placing more material above; it depends on circumstances. If he can afford the labour and can get rid of the gravel, he may decide to excavate and make up the deficiency by adding more soil, or he may add the soil without removing the gravel. Frequently some modification of the latter plan is adopted, and the top soil is added to and enriched by the addition

of such soil, manure or other vegetable refuse as may be available; the object being to counteract the rapid drying of the surface soil due to the presence of gravel below. When planting Roses it is detrimental to place rank dung in proximity to the roots. The roots at this stage are unable to utilise such strong food material, and instead of growing, are more likely to decay. Thoroughly rotted manure may, however, be dug into the soil, and should be well mixed with it, so that when planting the compost will be a mixture of rotten dung and soil. Should the top soil be fairly good the best plan is to plant the Roses without any manure, and when planting is finished cover the surface with a two or three inch layer of dung, which may remain there all winter and be lightly dug in in spring.

Varieties grown as standards must be securely staked, and the stake should be placed in position when planting is being done, so that it may be well firmed when the soil is being placed around the roots. Bush plants should not be fully pruned till March, but should have the longer shoots shortened back, at least half way, to prevent rocking by wind. Ramblers may be cut down to within six inches of the soil to encourage the production of strong shoots from the base next summer. Many people object to removing the long shoots of Ramblers at planting time, but unless this is done at the latest in March satisfactory growth will not be made during summer, as the root system will not have developed sufficiently to produce a crop of flowers from the old wood, and new growths at the same time.

True Tea-scented Roses are usually not so hardy as most other races, and benefit from being protected with dry bracken, leaves, or other material until the advent of more genial weather in spring. Some good growers recommend drawing up the soil to a height of six inches or so about the base of the branches; then, though the tops may be killed, the buds below the soil are safe and grow away strongly in spring when the soil is levelled down.

A selection good for garden decoration and for cutting would be:—

HYBRID TEAS.

Caroline Testout, light salmon pink.
Crimson Emblem, very fine crimson.
General MacArthur, bright crimson.
James Coey, golden yellow.
Madame Abel Chatenay, carmine, rose and salmon.
Margaret Dickson Hamill, straw yellow, flushed carmine.

HYBRID PERPETUALS.

Hugh Dickson, brilliant crimson scarlet.
Mrs. John Laing, soft pink.

Mrs. R. G. Sharman Crawford, rosy pink, paler on the outside.

Frau Karl Druschki, pure white.

Fisher Holmes, crimson scarlet.

A. K. Williams, carmine red.

TEA-SCENTED VARIETIES.

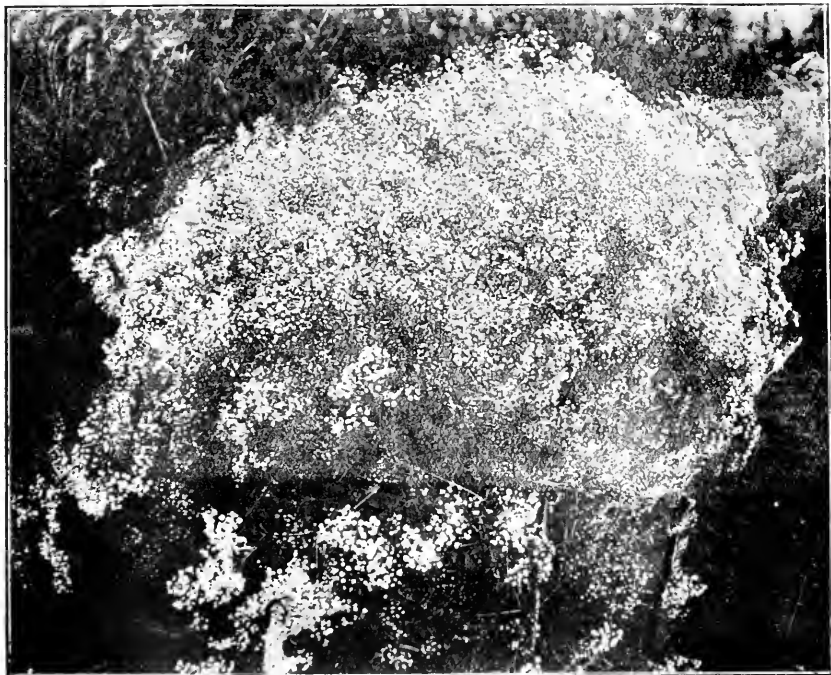
Lady Hillingdon, orange apricot.

Mrs. Campbell Hall, creamy buff, suffused carmine.

space is equally limited. Other races might be included, notably the dwarf polyanthas so useful for garden decoration, and the old-fashioned Roses, so delightful when planted and largely left alone; but fine varieties are so numerous nowadays that few people can grow more than a small number in each section.

Suggestions from readers would be of great value at the present time.

GROWER.



(GYPSOPHILA PANICULATA.)

Mrs. Foley Hobbs, ivory white, tinged pink.

Mrs. Myles Kennedy, silvery white, shaded buff and pink.

Harry Kirk, sulphur yellow.

Madame Constant Soupert, golden yellow and peach shaded.

RAMELERS.

Blush Rambler, soft blush colour.

Dorothy Perkins, soft pink.

Paul's Scarlet Climber, bright scarlet, shaded crimson.

Ercelsa, scarlet crimson.

Minnehaha, very fine pink.

Debutante, soft pink.

The selections given above are limited, and are intended merely as a guide to those whose

Abstracts

In the October number of *The Agricultural Gazette of Canada* there is an interesting account of the second Annual Convention of the Great Plains Official Horticultural Association. The party consisted of delegates from various parts of Canada and the States. Although a great agricultural country Canada gives much attention to horticulture, and schemes of far-reaching importance are in hand. The production of horticultural plants suitable for growing in the far north-west is occupying the attention of the best brains in Canada, and already remarkable results have been achieved. Instead of complaining that this, that and the next thing cannot be grown, the Canadians set to work, and by experiment and hybridization they produce varieties suitable to the soil and climate of the prairies. With, in many ways, a better climate, we in Ireland should be doing the same.

"Under the direction of Mr. W. C. McKillican and his gardener the party inspected the Brandon Farm, where some interesting tests in the culture of Tomatoes were being carried on. . . . In the orchard a number of cherries, plums and apples were seen to be giving fair satisfaction and proving sufficiently hardy for the western provinces. The Sand Cherry and Japanese hybrid produced by Professor Hansen were bearing fairly abundantly.

"The Mammoth Plum, a production of Mr. A. P. Stevenson, a seedling of the Cheney, was

deciduous and coniferous tree seedlings by the million for prairie farms, and he deserves credit for the remarkable way in which he has developed a treeless prairie farm into a place of great beauty. Some of the outstanding varieties of trees for prairie planting are Black Bill's Spruce, Siberian Larch, Lodgepole and Scotch Pine. . . ."

At the conclusion of the Convention it was decided that the following facts had been emphasised:—

"1. That the horticulture of the Great Plains Region is one of international importance, and the



ERIGERON QUAKERESS.
Flowers light mauve.

found to be perfectly hardy and bearing well. Two of the hardiest apples were Osman and Columbia. One of the lilac giving best satisfaction was the villosa lilac (*Syringa villosa*), which was seen in the arboretum at the farm.

"At the Experimental Farm at Indian Head the party, under the direction of Superintendent McKenzie and Professor Macoun, spent a profitable morning in the gardens, orchards and arboretum, and compared the relative hardiness at this point of the various types and varieties as they had done at Brandon the day before.

"A visit to the Forestry Station, where Mr. Norman Ross, Superintendent, took charge of the party, was of special value to those interested in beautifying the farm homes of the Prairie Provinces. At this station Mr. Ross is producing

problem can best be solved by co-operative and co-ordinated effort.

"2. That the work of developing fruit and vegetables for this region is a problem that will require long periods of time and is a problem that should receive the support of governments and public bodies.

"3. That this region is capable of great horticultural possibilities.

"4. That these annual gatherings are an excellent means of arousing a widespread interest in this question."

We reproduce the above to show the importance attached to horticulture in the great Dominion of Canada. Nearer home, in Great Britain, horticulture is booming, and both practical and scientific men are bending to the task of developing

horticulture to the utmost, not only from the point of view of producing more food, but also with a view to adding to the amenities of life in planting for ornament and in the introduction of new and rare plants from far countries.

Let us see to it that Ireland does not lag behind.

Woolly Aphis, or American Blight

(SCHIZONEURA LANIGERA).

This pest is unfortunately too common on Apple trees, particularly if they have been neglected in cultivation.

The appearance of the pest is familiar to most people connected with Apple growing. The injury to the tree is caused by the insect piercing the bark and sucking the juice, and a severe attack will eventually destroy a tree. Various remedies have been tried; one of the best, when the attack is slight, being to lightly brush over the small clusters of insects with an ordinary sash tool dipped in methylated spirits. This, though effective, can only be carried out on a limited scale. Where the attack is severe spraying must be resorted to both in winter and summer.

Paraffin is the most effective insecticide for spraying, and should be used in the form of Petroleum Emulsion. This can be purchased, ready-made to a proper formula, and with reliable instructions for dilution to the right strength.

Affected trees should be thoroughly sprayed as soon as the leaves are off, and it is of importance to apply the spray with considerable force, the difficulty being to penetrate the woolly covering which protects the insect. The Petroleum spray may also be applied in summer, though then it is more difficult to reach the pest owing to the leaves. Nevertheless, persistent and careful spraying is the only remedy.

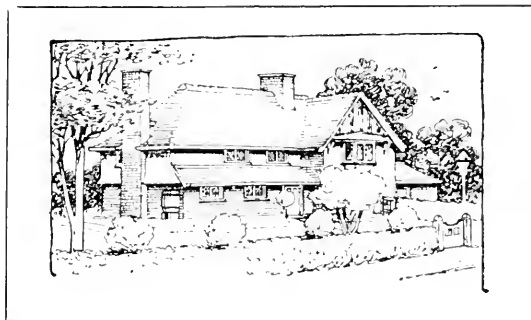
POMONA.

NOTICE

READERS are invited to submit questions bearing on gardening in any of its branches. It is our desire to stimulate and encourage gardening in Ireland, and we are in touch with experts who will be glad to give every assistance.

We are always open to consider articles, and would be glad to receive photographs—of gardens or plants—for publication, if suitable; senders will oblige by stating whether payment is desired in the event of publication.

Contributions should reach the Editor not later than the 15th of each month.



Allotments.

GENERAL WORK.—Little can be done this month in the way of cultivation of the crops. Those allotment holders who cultivated the plots so as to ensure a supply of vegetables during the winter will now reap an advantage over others who merely planted the plots with Potatoes and Cabbages. Many allotment holders have now good supplies of Leeks, Cabbages, Broccoli, Sprouts, and Curled Greens as well as root crops. Where the roots have been stored on the plot, precautions should be taken in the way of an extra covering of soil, as frost, in more or less severity, can now be expected.

DIGGING.—The period of drought this season has once again emphasised the importance of double-digging. Plots which had been trenched gave a far better return of vegetables, and did not appear to suffer in the dry weather to anything like the same extent as plots which had only been cultivated to a shallow depth. Even in ordinary digging the spade should be pushed down as deeply as possible, and the soil properly turned over. It follows that if the spade is only pushed down five or six inches every time, the plot is dug to that depth only. Whereas the deeper the spade is pushed the deeper will the plot be dug all over. To bring land into the highest state of cultivation it should be double-dug or trenched. If the whole plot cannot be trenched in one year, the process could extend over two or even three years. Trenching is best done in the autumn or early winter, when the conditions are favourable. Whether the sub-soil should be brought up and the top soil placed below is a matter of opinion, but allotment holders generally are well advised to let the sub-soil remain below. The digging should cease when the ground is frozen, unless it has been protected with litter. On no account should snow be dug in. Heavy soils especially will benefit by being dug deeply in the autumn and the surface left rough and lumpy, exposed to the frost. Heavy land which is often difficult to get into the right condition for sowing seeds in the spring should also be manured in the autumn, if possible, and, after digging, if a good sprinkling of powdered lime could be given the surface will not be so sticky in the spring. Digging the land deeply also provides an opportunity to bury weeds and rubbish which have accumulated on the plot. All plants which are diseased, however, should be burnt, and the ashes will be useful for digging into the ground for Onions.

MANURE.—Allotment holders are obliged to take what manure can be obtained locally. Good farmyard manure is worth paying a little more for if it can be obtained. Plotters in the North describe farmyard manure as "good value," and undoubt-

edly it is, for not only will it supply food for plants, but also improves the state of the soil. Nearly all soils will benefit by the regular application of good dung. Pig-manure is a strong manure, and it should be well mixed with litter and soil. Poultry manure is rich, but it is often sticky when fresh and lumpy when it is dry. The best way to keep it is to store it under cover and mix it well with soil. Where seaweed can be obtained it is a good, cheap manure for Potatoes.

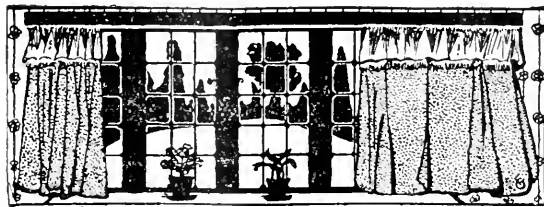
LIME.—Practically all soils used for the growing of vegetables stand to benefit by the application of lime. On allotments where club-root is present, lime becomes then an urgent necessity. On heavy soils lime will be found beneficial in allowing water to pass away more freely. Unless there is a certain amount of lime in the soil in some form or another, full value is not obtained from the application of natural manures. Farmyard manure and lime should, however, not be mixed together in a heap; also, lime should not be mixed with soot when they are used together for the purpose of manure. Perhaps some agricultural soils are not improved very much by liming, but gardens and allotments will nearly always be benefited thereby. The winter months are the best time to apply lime, which should be in as fine a powder as possible for proper distribution. A word of warning may be said in regard to gas lime. This substance contains a good deal of poisonous material, and it should not be applied to growing crops. A very slight dressing will be safe if applied some considerable time before seeds are sown.

Soot.—Soot from a kitchen fire is very useful as a top-dressing in the spring for vegetable crops. Many will, no doubt, have observed how dark green and robust Onions become after one or two dressings of soot. It is also valuable for making liquid manure. If soot is raked into the soil before sowing Turnips it often forces these plants into growth and helps them to grow away from the fly. The soot from a factory chimney is generally a totally different substance to that obtained from a kitchen chimney, and a better name for it is flue dust. As a general rule it is a more or less worthless material so far as its manurial properties are concerned. Sometimes the flue dust, however, from certain blast furnace chimneys contains an appreciable amount of potash, which makes it valuable for applying to the land for Potatoes.

Allotment holders have had a great variety of soils to contend with, but the most stubborn soil will yield to deep cultivation and good manuring. A case occurred in Belfast, where plots have been laid out on the site of a brick works, which was one of those scenes of desolation common to large industrial towns. It has now been transformed into a veritable garden—a credit to the promoters of the scheme for utilising waste places and an example of industrious labour. We are beginning to realise the capabilities of the soil for producing vegetables. Our land in the past has only been half cropped. The rural districts are even worse than that in the vicinity of the towns, but happily there are signs of improvement. G. H. O.

Plants in Rooms.

From now onwards until spring pot plants in rooms should be carefully watered. On no account should water be given unless the pot rings when rapped with the knuckles, and then sufficient water should be given to moisten the soil down to the bottom. Further, in very cold weather the chills should be taken off by adding a little warm water to that to be applied to the soil.



The Month's Work.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

THE transplanting of flowering shrubs and trees may be undertaken during this month with the prospect of better results than if left until spring, but the work should not be attempted when the ground is very wet or very dry. The new positions should be well prepared beforehand by trenching or deep digging, and by the addition to the soil of plenty of leaf mould or peat in the case of poor land. When all is in readiness, the actual lifting and re-planting should be carried out as speedily as possible, so that the roots do not suffer from undue exposure to drying winds. Each specimen should afterwards be secured to a good stake and a light mulch provided.

CLIMBING ROSES.—These may now be planted, and, where the root room is restricted—as is often the case when they are planted on arches and pergolas—a good large hole should first be excavated to a depth of two feet. In the bottom of this a good layer of manure should be placed, and the hole then filled up with good loam, to which a sprinkling of bone meal has been added. If planting is done now one or two growths may be tied in to flower next season, and the rest cut down to the ground level, but if planting is deferred until spring it is best to cut back all the growths, as this will encourage the formation of strong shoots, which will provide a good display of flowers the following season. A selection of the best Climbing Roses would include American Pillar, Blush Rambler, Tea Rambler, Dorothy Perkins, Alberic Barbier, René André, François Juranville, Evangeline—a most sweetly-scented variety—and Adrian Riversham, which flowers continuously from July to December.

The planting of bulbs should be completed as soon as possible, as the earlier these are planted the better the results will be. The well-known and well-tried varieties of Daffodils are the best for planting in grass, but for the garden a few of the newer kinds should be procured each year. Many of these increase rapidly, and are far in advance of the older kinds for garden decoration and as cut flowers. I have this autumn planted some hundreds of bulbs each of such kinds as Glory of Leiden, Mdm. Plomp, Mdm. de Graaf, Golden Bell, Victoria, Lucifer, Albatross, White Lady, and many others, being the produce of 1 doz., and in some cases only ½ doz., bulbs of each kind purchased a few years ago.

Violets in frames should be freely ventilated except when it is actually freezing. Stir the sur-

face of the soil occasionally with a pointed stick, and keep all decayed leaves rigorously picked off or serious damage may result from damping.

The plants of *Helleborus Niger* (Christmas Rose) should be cleaned of dead leaves and other rubbish, and spare frames or hand-lights should be placed over them to keep the flowers clean. There are several different varieties of this type which give a natural succession of flowers from October till February.

THE FRUIT GARDEN.

November is the best month for planting nearly all kinds of fruit trees and bushes, and if the sites have been well prepared this work should be proceeded with whenever the ground is in suitable condition. It is, however, better to wait a month if necessary rather than plant when the ground is wet and sticky. Suitable stakes for each specimen should be in readiness, also a little good soil to work in amongst the roots of each tree as it is planted. It is a common error to plant too deeply, and this is a frequent cause of canker on wet soils. The different layers of roots should be spread out horizontally, and the topmost layer should only be about 3 inches under the surface when the hole is filled in. Beginners are often in a quandary as to the proper distances apart at which to plant; so that a table dealing with the more popular kinds in this respect may be of value. Bush and Pyramid trees of Apple and Pear 8 to 12 feet, according to the variety; Standard Orchard trees 20 feet apart; wall trees of Plum, Pear, Peach, &c., 12 to 15 feet apart for high walls, and 18 feet apart for low walls and fences. Gooseberry and Red and White currant bushes, 5 feet apart; Black Currants, 7 feet; Raspberries, if in rows, 2 feet apart, and 5 to 6 feet between the rows.

When planting Apples regard should be had to those varieties which succeed best locally, but the following list of 12 varieties, 6 Cooking and 6 Dessert, are of good quality and of proved hardiness and fertility, and will provide a succession throughout the season. Cooking—Grenadier, Loddington, Lord Derby, Lane's Prince Albert, Bramley's Seedling, and Newton Wonder. Dessert—Beauty of Bath, James Grieve, American Mother, Allington Pippin, Cox's Orange, and Lord Hindlip.

Where American Blight is increasing on Apple trees they should be thoroughly washed with the sprayer as soon as the fruit is gathered, using a strong solution of nicotine and soft soap, or a paraffin emulsion.

MORELLO CHERRIES.—As soon as the leaves have fallen these trees on walls should be taken in hand for their annual pruning and training. This variety fruits on young wood formed the previous season, therefore, any old wood not required for extension may be cut out. The young growths should be evenly distributed over the wall space at 4 to 6 inches apart, cutting out all weak and badly-placed shoots. Old trees will be greatly benefited by a topdressing of rich soil, after the pruning and training is finished.

THE VEGETABLE GARDEN.

All vacant ground should now be turned up roughly for the winter. It is a good plan to leave the surface in ridges, so as to expose the greatest possible area to the mellowing influence of frost. A portion of the garden should be trenched each winter, and this will provide work for spells of

broken weather when the ground would be too wet for ordinary digging. All soft, unburnable garden refuse, such as Cabbage and Cauliflower stumps, Brussels Sprouts leaves, &c., can be buried in the trench as the work proceeds. It is my practice always to have a piece of ground in process of being trenched, either in the garden or orchard. The trench is left open for the reception of all soft rubbish, and when full up the soil from the next trench is placed on top, leaving another rubbish trench open. Ground treated in this way will produce tremendous crops without any other manure for at least two years, and is especially suitable for Runner Beans, Marrows, and Cauliflowers.

The main crop of Celery should now be earthed up finally for the winter, putting plenty of soil to the plants to exclude frost.

If Rhubarb and Seakale are to be forced for Christmas the "stools" and crowns should now be lifted and left exposed to the weather for a week or two before being placed close to the hot water pipes in the mushroom house or under the staging in a plant house, where they can be kept dark and moist. One batch of Rhubarb will continue to give stalks for pulling over a long period, but with Seakale it is better to put in a few dozen crowns about every ten days for a succession. In addition to the young crowns of this valuable vegetable, which are grown especially for lifting and forcing, there should also be a good permanent plantation in some convenient corner for forcing outside in February, by covering the crowns with large pots over which a hotbed is made up, and later in the spring with clean cinder ashes only. In this way a constant supply can be easily kept up until the first Asparagus is ready to cut early in May.

Cauliflower seedlings in frames should be ventilated freely and encouraged to make slow and sturdy growth. The surface soil between them may be stirred occasionally with a pointed stick, and a fortnightly dusting of soot over the plants will keep off slugs.

Embothrium coccineum.

THIS handsome Chilean shrub is one of the glories of some Irish gardens where soil and climate are suitable. As a rule but little variation is noticeable in colour or habit, but when visiting the wonderful Arboretum at Rostrevor House lately a quite distinct variety was pointed out. The plant in question was raised from a seed, the source of which Sir John Ross was not certain of, but the colour was bright orange scarlet and altogether distinct in shade from those on a very much larger specimen of the type. The flowers, too, seemed rather shorter than usual, but this may have been due only to the age of the flowers or, perhaps, of the plant itself; in any case there was no mistaking the difference in colour though leaves and habit were quite similar. It would be interesting to know whether others have observed any variation among seedlings of this most desirable shrub, or tree, as it may be called.

B

Polygonum vaccinifolium.

UNTIL the advent of the recent frost in the middle of the month this was one of the most attractive plants in the garden, carrying innumerable spikes of pink flowers. It delights to hang down over rocks.

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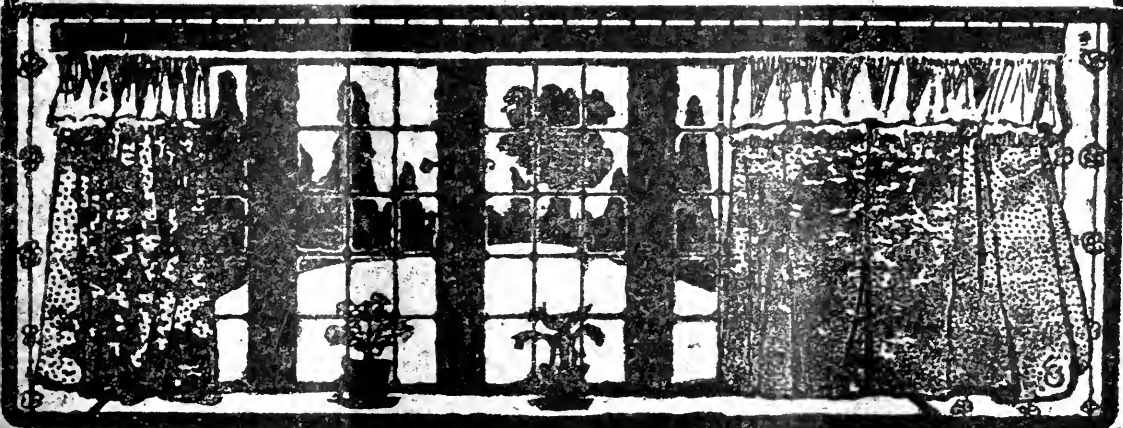
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Irish Gardening

Contents

	PAGE		PAGE
A Late Autumn Nook in the Garden	177	Alloiments	186
Celmisias (Illustrated)	178	The Month's Work—	
Pinks for the Rock Garden (Illustrated)	179	The Flower Garden	187
Notes from my Rock Garden	181	The Rock Garden	187
A Fine Viburnum	182	The Fruit Garden	187
Liquid Manure	182	The Vegetable Garden	187
Paul's Scarlet Climber (Hybrid Wich- uraiana)	183	Royal Horticultural and Arboricultural Society of Ireland	188
Silvery Saxifragas (Illustrated)	183	University Appointment for Mr. J. P. Drew, A.R.C.Sc.I.	188
Forestry—Trees for Shelter and Orna- ment	185		



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F. W. MOORE,

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IRISH GARDENING

VOLUME XIV
No. 166

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

DECEMBER
1919

EDITOR—J. W. BESANT

A Late Autumn Nook in the Garden.

By MURRAY HORSBROOK.

"AMARANTH'S" note on autumn effects in the September number of IRISH GARDENING (p. 138) caused me, in mid-October, to visit a little special "autumn nook" that I made in my Rock Garden a couple of years ago.

colour after the glory of the Rock Garden had departed. It had to be a sunny nook, and it could not be very extensive. I tried the experiment anyhow, and it has proved most successful. Of course, many of the plants in the nook



Photo by

DIANTHUS NEGLECTUS.

[F. C. Preston

There is no use disguising the fact that the Rock Garden ceases to be generally effective as soon as the late summer Campanula bloom is over.

No doubt for a month or two longer isolated plants make a brave display, but, as a rule, these only tend to accentuate the past glories of their neighbours. It occurred to me that it might be worth while collecting into one little nook such plants as might be likely to give one

are not "alpines." A friend once told me that he classed as "Alpines" "anything that did not look out of place on his rockery," and, judging from what one sees growing in modern Rock Gardens, there appear to be many who agree with him.

In my own case I did not, in this instance, confine myself in any way. I simply went round my garden with a trowel, and dug up any plant that I thought might suit my purpose.

Having planted the sunny nook, one must consider which plants will flower naturally late in the season, and which can be encouraged to do so. Among the latter the *Violas*—especially *V. munbyana* and the cross *V. munbyana* × *gracilis*—if pinched back slightly about the end of June, will flower profusely until the frost comes. *Campanula muralis* is equally obliging; the double and single Welsh Poppies and the garden hybrids of *Antirrhinum glutinosum* can also be treated in this manner. This year, in mid-October, in addition to the above, the following plants helped to make my autumn nook a blaze of colour:—

The dwarf Michaelmas Daisies take pride of place. Of the names of many of them I am not sure, but I noted two varieties of *Aster Thomsoni*. Also *A. diffusus*, *A. "Esther,"* *A. Fremonti*, *A. bessarabicus*, a small-growing *A. Amellus*, an unnamed pigmy white *Aster*, and the very rare *Aster Vahlü*, bearing on 6-inch stems clouds of golden "ragworts." Except the gawky *A. linoxyris*, *A. Vahlü* is the only yellow species I know.

Zauschneria californica is a trailer with scarlet bugles. Other *Violas* in flower were—*V. "Bowles Black,"* *V. rothomagensis*, and *V. Olympica*, a tiny mauve "self"; *Lippia canescens*, a creeping Verbena, with inconspicuous white flowers; *Stachys corsica*, another carpeter with white, yellow-lipped flowers. *Fuchsias microphylla* and *parvifolia* are not hardy, and must be lifted when the frost comes; likewise *Mesembryanthemum*, names unknown, but one with vivid magenta purple daisies is a wonderful bloomer. *Hypericum reptans*, a trailing sheet of green, with large, golden single roses; *Scabiosa caucasica* *Erigon rosea* (?), *E. mucronatus*, *E. sericeus*, and *E. Roylei*; *Campanula garganica*, "W. H. Paine" and *C. Feneestrelata*; *Erica vulgaris*, *Serlei* and *Alportii* are the best late white and purples, and the Connemara Heaths flower on even longer. *Oxalis floribunda rosea* and *alba* never cease flowering, and the new *O. lobata*, with flowers of deepest golden yellow, is a gem.

Pentstemon Scouleri, *Pyrola arenaria*, and *Arenaria laricifolia*, Sedums of many kinds; *S. Pulchellum*, bright pink, possibly the best. *Plumbago Larpena* has too much foliage for the size and number of its flowers to deserve a choice place; *Roscea sikkinensis*, bright purple; *Coloclastes adpressa* and *Humifusa* carpeters, with bright berries; *Linum Austriacum*, bright pale blue; *Polygonum vaciniifolium*, light pink; *Parochetus communis*, the "blue shamrock," an uncertain doer with me; *Linaria origanifolia*, and *L. "Hendersoni,"* the latter is the only perennial toad flax of

upright growth that does not eat me out of hearth and home. So far, it remains absolutely compact, and throws up feathery bunches of mauve-blue flowers on stems about six inches high; if it does not run underground, like most *Linarias*, it will be a fine autumn rock plant.

Low down at the edge of the nook the autumn-flowering cyclamens are very bright, and poking up through them I see the flower-stems of that most beautiful Saxifrage, *S. Fortunei*. Its large, shiny bronze leaves are attractive, and its white flowers, with two long petals like swallow-tails, are very beautiful, but unfortunately they as a rule open only in time to be nipped by the frost.

For mid-autumn this is not a bad show, and certainly, when grouped together, they make the nook wonderfully bright; and it is certainly pleasant in the fall of the year to know that there is one spot in one's rock garden where, upon a sunny day, one can still hope to find a patch of colour reminiscent of those glorious patches ("drifts" I understand is the up-to-date expression) of May and June.

Celmisias.

THESE interesting plants are mostly natives of New Zealand, and belong to the great family of Composites.

They are not yet commonly grown in gardens, but as they become better known and their requirements more fully understood, it is likely that they will become popular. Their successful cultivation is still largely a matter of experiment, but to the gardener who enjoys solving problems this will only add zest to the fight. Added to this, the beauty of several of the species makes success worth striving for.

In the reputed genial climate of New Zealand it may be there are factors we cannot imitate, but the accompanying illustrations of specimens flowering at Mount Usher, County Wicklow, and Glasnevin, in County Dublin, would tend to show that in Ireland, at least, there is hope of success.

There are, perhaps, a dozen species known in cultivation, though they are seldom all to be found in one garden. Four of them can be called fairly satisfactory—viz., *C. coriacea*, *C. McKauii*, *C. spectabilis*, and *C. verbascifolia*. The first-named is a handsome plant, with long, stiffish coriaceous leaves, clothed with silvery hairs above, and furnished with a dense yellowish felt below. The flower-heads, borne on long, stout, hairy scapes, are often 2 inches or more across, with long, white ray florets; a very fine plant in or out of flower.

C. McKauii is vigorous, making long, pointed, green leaves in abundance, but the flower-heads are composed of disk florets, with ray flowers of a dingy, unattractive puce colour, of little ornamental value.

C. spectabilis is better known and hardier than most, forming dense tufts of woolly leaves some 6 inches long, and usually flowering freely; the ray flowers pure white, and the heads measuring about an inch and a half wide.

C. verbascifolia is similar to *C. coriacea*, less hairy perhaps, but felty on the under side. The flower-heads are large and showy, the outer florets white. The illustration shows a group of this species flourishing in the collection of Mr. Walpole at Mount Usher.

Other good and interesting species with showy flower-heads are—*C. Monroi*, *C. incana*, with short leaves and white outer florets; *C. longifolia*, with narrow, bronzy-green leaves, and large heads of white flowers, on 9-inch stems.

C. holosericea—flower-heads 2 inches or more, ray flowers white, leaves 6 inches long, green above and felty below; while two others met with are *C. petiolata* and *C. viscosa*, both attractive plants.

Ordinary well-drained sandy loam seems to suit *Celmisias* fairly well, and a position not fully exposed to the mid-day sun. Overhead moisture is detrimental, and should be avoided as far as possible.

Pinks for the Rock Garden.

BOTANICALLY the Pinks are called *Dianthus*, and are distinguished from other members of the order *Caryophyllaceæ*, to which they belong, by having *two styles* and a *cylindrical calyx*, with *two or more bracts at the base*, somewhat like an outer calyx.

There is a large number of species scattered through Europe, temperate Asia and N. Africa, but in many cases it is difficult to get the true species. Under cultivation, the various species seem to hybridise rather freely; in any case, seedlings raised from seeds purchased or obtained from collections at home and abroad exhibit much diversity, and frequently differ vastly from authoritative descriptions.

On the other hand, some of the best for our present purpose come very true from seeds, and in some instances no doubt improved forms have been obtained by selection.

Very few of the species are difficult to grow, and are just as easy to propagate. Seeds sown when ripe in an ordinary compost of equal parts of sandy soil and leaf-mould germinate readily, and are easily grown on by pricking off, when

large enough to handle, into a similar compost, with the addition of a little finely-powdered old mortar rubble. Cuttings made of single growths and dibbled into sandy soil root readily if placed in a cool, shady place during summer. Water should be applied carefully after the first soaking, until roots are formed, after which more water and air may be supplied. Pinks grow naturally on old walls and rocky cliffs, and hence enjoy plenty of light, gritty soil and perfect drainage.

The following is a selection of the best for the Rock Garden:—

Dianthus alpinus is decidedly one of the most popular species, and is usually found in every garden where alpine plants are grown. It forms tufts some 3 or 4 inches high, leaves green, and surmounted in summer by numerous large, well-formed flowers of a rich rose colour, with crimson spots towards the base of the petals. There is a white variety, which is not unattractive, though not a really good white, the petals usually being spotted, as in the type.

Dianthus alvobubens forms tufts of rather long, glaucous leaves, and bears its flowers in close heads, terminating stalks some 15 inches or more in height; the colour is rich dark red, and the flowers appear later than many others. The Pink known as *Carton Variety* is a particularly robust form, of fine colour, making a brilliant display in late summer.

Dianthus cæsius, the well known "Cheddar Pink," is a most attractive plant for the Rock Garden. From among tufts of short, glaucous leaves the fragrant, rose-coloured flowers are produced from June onwards. Quite a number of varieties of the "Cheddar Pink" are in cultivation, and all are worthy of inclusion, if space can be spared for them. A double-flowered form is sometimes met with, and is showy, though less compact in habit, than the wild species. *Bickham's Variety* and *Margaret* are two compact forms, more like the type, but with rather better flowers.

Dianthus callizonus is near to *D. alpinus* in habit and appearance, bearing large rose-coloured flowers, not unlike those of the latter species, but differing in the coloured zone at the centre of the flower: a first-rate plant of low growth, not exceeding 3 or 4 inches when planted in gritty soil.

Dianthus calalpinus is a hybrid between *alpinus* and *callizonus*, and combines the good qualities of both parents, producing freely its deep rose flowers.

Dianthus cinnabarinus is not easy to cultivate, and is anything but a neat grower. It is sparse and twiggy in growth, often nearly leafless at flowering time, but the colour is superb—a brilliant orange red. A good group

of this species is worth working for, if only for the colour. Propagation may be effected by cuttings, but if the plants are allowed to flower they often die afterwards. It is well to reserve a few plants and pinch out the flowers, so as to induce the formation of growths instead. To obtain good seeds, artificial pollination should be done.

Dianthus deltoides, the so-called "Maiden Pink," is a popular species, giving a wealth of flowers in summer. The leaves are glaucous green, and the flowers, produced on rather long stems, are rose-coloured, with a darker zone towards the centre. Several varieties are

Dianthus deltoides, but is more refined. The smaller leaves are stiffer, rendering the whole plant more compact, while the rosy pink flowers are just as freely produced on slender, wiry stems.

Dianthus microlepis is a close-growing, compact little plant, forming dense tufts of short leaves, after the manner of *D. Freynii*, but producing pale pink flowers. *D. microlepis rumelicus* is similar in habit, but with richer-coloured flowers.

Dianthus neglectus is well known to lovers of alpinæ, and is certainly one of the gems of the genus. It forms tufts of short, grass-like



Photo h37

CELMISIA VERBASCIFOLIA AT MOUNT USHER.

[W. E. Tierthick

known, particularly one with more decidedly glaucous leaves. *Dianthus Grisebachii*, of similar habit, but with more intensely coloured flowers, seems to be closely allied to the "Maiden Pink," and comes from the Balkans.

Dianthus fragrans is a charming plant, with glaucous leaves, and sweet-scented white flowers, the petals deeply fringed; there is, too, a double-flowered variety of this, which makes a good display.

Dianthus Freynii is one of the tiny gems of the genus, scarcely exceeding a couple of inches in height, forming compact tufts of short, glaucous leaves, from among which rise the rosy flowers, half an inch to three-quarters of an inch across. This is a delightful little plant for cracks, crevices or moraine treatment.

Dianthus graniticus is after the style of

leaves, and produces delightful rose-coloured flowers, the petals serrated, and usually buff-coloured on the under side. Seedlings of this species vary somewhat in size of flower and in colour, but all are effective on the Rock Garden.

Dianthus nanus forms tufts of small leaves, and produces quantities of small, white flowers on long, wiry stems during late summer. Though not so striking as some of the more highly-coloured species, it is valuable in its later flowering, and grows freely.

Dianthus petreus has rose-coloured flowers, with fringed petals, produced on wiry stems, some 6 inches long. The leaves are awl-shaped and green, the growths forming a spreading mat on the rock work.

Dianthus plumarius is the parent of the garden Pinks, of which double forms are com-

mon in gardens. It is a most attractive plant for the Rock Garden, forming spreading masses of glaucous, narrow leaves. The flowers are produced in profusion, the best being pale pink, though white, and even spotted, varieties may occur.

Dianthus subacaulis is a beautiful little plant,

Dianthus sylvestris is quite one of the best of the rock Pinks, producing many beautiful rosy-pink flowers on wiry stems, 6 to 9 inches in length. A mass of this species hanging over a rock is a beautiful sight when flowering in July and later.

J. W. B.



CELMISIA CORIACEA AT GLASNEVIN.

making compact tufts of short leaves of a glaucous hue, and producing abundantly small, rose-coloured flowers on short stalks; the whole plant does not exceed a couple of inches or so in height.

Dianthus superbus bears fine, rosy-pink flowers, with much-divided petals and narrow, green leaves. The flowers are deliciously fragrant, and held nearly erect, the height when in flower being about 6 or 8 inches.

Notes from my Rock Garden.

Autumn Planting.

By AMARANTHE.

THE late months of autumn do not sound very interesting in the Rock Garden, nevertheless I have found them so.

It is a great pleasure to chose and place the dry corins and bulbs just where they ought to

go, and let one's imagination skip over the intervening months, till one sees the awakening of all the different little Bells, Trumpets, Chalicees, Cups and Stars—the very thought has a joyous ring about it.

Copying a beautiful patch I saw last spring in a Rock Garden, I have planted a quantity of Muscari "Heavenly Blue"—a very fine variety of the familiar Grape Hyacinth—and I think it is in its rightful place. Neither pink or red or crimson shades are to approach its vicinity; but French greys, bluey lilac and other faint tints, represented by Phloxes, pale Violas, and the exquisite *Anemone Robinsoni* and such like are distinctive, though pure blues, such as *Myosotis* "Ruth Fischer," *Omphalodes* and *Scillas*, are quite permissible, and the *tout-ensemble* would by no means give one a fit of the blues—quite the contrary.

Fritillarias have a most graceful effect among large stones, their wide bells swinging from such slender stems. I would say plant bulbs of *F. alba* for choice; *F. meleagris* sooner than none; but even before all these have bloomed the lovely little miniature Daffodils and Hoop-Petticoat Narcissi will have made their welcome appearance. These gems must not be forgotten in the autumn, or even early December planting—early autumn for preference.

Apropos of these little bulbs, my hopes are centred in the following varieties:—*juncifolius*, the tiny rich yellow miniature Daffodil, 6 inches high; its companions, *Bulbocodium citrinus* (the sulphur Hoop-Petticoat), *B. conspicuus* (yellow Hoop-Petticoat), *B. monophyllum*, snowy-white, scarcely to be counted on for out-of-door flowering, and "Mosebatus of Haworth," another beautiful white, which is vigorous.

Of the *Tiandrus* Section (the Angels' Tears' Daffodils), *T. alba*, 7 inches, yellow, of the same height and description. Any taller I prefer in the borders among some of the delightful large white Trumpet Daffodils, the bi-colour and yellow, and Narcissi, of different choice kinds.

A Fine Viburnum.

In the garden of Mr. W. B. Purefoy there is a remarkably fine *Viburnum rhytidophyllum*, which many state to be the largest they have seen. It is ten years planted in Greenfields, and covers a space of 12 feet by 6 feet. It is a handsome and striking evergreen, perfectly hardy here in open situations. The creamy white flowers are borne in May, followed in autumn by red berries, which soon become

black. If preserved until spring and sown in a mixture of peat and sand, they soon germinate. It was one of the novelties sent out by Messrs. Jas. Veitch in 1908.

Liquid Manure.

My object in writing these notes is to endeavour to bring about the extended use and to further popularise liquid manuring during the winter months, and especially in relation to gardening and fruit-growing out-of-doors.

A popular fallacy exists, especially amongst amateurs, that liquid manure applied during the winter months is more or less wasted, and, consequently, valueless, but I venture to say that such is far from being the case.

No one denies that the feeding of plants and fruit trees during the active season of growth is of paramount importance in good culture, and, consequently, during the spring and summer months the supplies of liquid manure—and by this I refer to the drainage from the cow-sheds, stables and manure-heaps—are usually in great demand, and especially for applying to the various subjects grown under glass.

In the same manner, I am going to urge that the subjects out-of-doors would similarly benefit, but, unfortunately, I am afraid in the majority of establishments pressure of work in other directions forbids this being carried out, and so this work has to be relegated to the winter and slackest months of the year, when, fortunately, as a rule, supplies of this valuable product are available in largest quantities, but I fear in many instances is allowed to go to waste.

Reference has been made on more than one occasion through the columns of IRISH GARDENING to the great need of furthering the cultivation of fruit in this country—that all-important branch of horticulture. Increase in cropping and quality makes such a difference to the owner, and is governed largely by scientific and up-to-date methods of culture with regard to pruning, spraying and feeding; the latter I am sure being the determining factor, especially in relation to trees that are advancing in years, and have carried heavy crops during the past season, whether it be plantations of bush fruits, trees trained on walls, or orchard trees of the various kinds, and especially those where the land is laid down to grass. Young trees in fertile soil are probably the one exception where this quick-acting form of nitrogenous manure would not be required, and especially those on the dwarfing stocks. Feeding of this description is undoubtedly best carried out during open

weather, when the surface soil will readily absorb the supplies; and should the ground be very hard, it should be loosened with the fork, and the liquid kept away from the main stem at a distance corresponding with the spread of the branches, where the feeding roots will be found.

Fruit tree plots are not the only quarters where liquid manure may be used. Late Celery in trenches, during the month of October, will readily respond to a soaking before earthing up, as will also Leeks, Rhubarb and Asparagus beds; and in these times of shortage of manure, every care should be taken to retain supplies of this valuable fertiliser, which also has the additional advantage of not producing a crop of weeds in its train, as does some of the rubbish nowadays used for litter and converted into manure. E. B., Fota.

Paul's Scarlet Climber (Hybrid *Wichuraiana*).

THE flowers of this superb Rose are vivid scarlet shaded with bright crimson, and are produced in the greatest profusion in large clusters of medium-sized, semi-double blossoms.

The colour is well retained, without burning or fading, till the petals fall, and the flowers remain on the plants for an unusual length of time, giving a brilliant display in the garden. It is of strong climbing habit, with handsome foliage, and quite hardy here, having been planted in 1916, a trying year. Raised by Wm. Paul & Sons, Waltham Cross.

P. S., Tipperary.

Silvery Saxifragas.

THIS is the section called by botanists *Euaizoonia*, the members of which are distinguished by having rosettes of undivided leaves generally with a more or less heavy deposit of lime on the margins of the leaves, giving them a silvery appearance; flowers usually in panicles, white, but often with red spots; in some varieties the whole flower becomes rosy and in a few cases pale yellow.

The members of this section include some of the finest species in the genus, and they are extremely popular among lovers of alpine. Cultivation presents no difficulties, the prime essentials being gritty soil containing lime, ample drainage, and free exposure to the sun. For planting in the many cracks and crevices incidental to most rock gardens no plants are more suitable. They will flourish, too, in ordinary pockets, providing soil and drainage are right, but prefer that the pocket should have a sharp slope.

When planting in narrow crevices small plants are obviously best, and the roots should be well shaken out in order that they may be inserted as far into the crevice as possible. Fine gritty soil must be carefully filled into the crevices, and pushed down with a thin stick; if possible, finish off by applying water slowly, so that the soil is not washed out. Thereafter the plants may be left

to take care of themselves, and will soon grow into fine tufts. Usually there is little difficulty in propagating these delightful plants. Most of them form offsets freely which, detached and dibbled into gritty soil, soon root; but in some cases the plant dies after flowering without making offsets, as in the case of *Sax. longifolia*, while in others, as for instance, *Sax. caldensis*, the rosettes are so closely packed and spring from a common root-stock, that it is difficult to separate the rosettes with sufficient stalk to enable roots to be formed. Plants that have been growing for some years, however, and have formed fair-sized "mounds," will generally divide into several pieces, each with a few roots; potted up separately in gritty soil, and kept close in a cold frame for a week or two, these divisions will soon establish and make nice plants.

The following are some of the best species and varieties:—

Saxifraga Aizoon, in one or other of its many terms, is to be found in most rock gardens. Precisely what the true type plant is would be difficult to say, as collected specimens differ immensely, and this is not to be wondered at since the species is widely distributed over the mountains of Europe, extending even to the Arctic Regions. All form rosettes, some quite small and compact, others larger, and in most cases the leaves are ornamental.

Sax. Aizoon balcana is one of the most attractive, with good rosettes and sprays of white flowers, so densely spotted with pink as to almost obliterate the white ground.

Sax. Aizoon baldensis forms compact rosettes of silvery leaves, and produces sprays of white flowers.

Sax. Aizoon atropurpurea is a choice variety, with handsome sprays of deep rose-coloured flowers.

Sax. Aizoon rosea is a good grower, bearing numerous sprays of rosy flowers lighter in shade than the last-named, and *Sax. Aizoon lutea* has yellow flowers which contrast well with those of the other varieties.

Sax. Aizoon Rex is one of the finest, forming handsome rosettes and producing large solid white flowers on red stems. Many other *Aizoon* varieties are in cultivation, but few will care to grow all, and many have little merit.

Sax. cartilaginea comes from the Caucasus, and bears some resemblance to the *Aizoons*, but has longer leaves, held more erect, and they have sharp points; the flowers, produced in loose sprays, are light pink in colour. This is not a common plant, but one that is worth acquiring.

Sax. cochlearis is known in several forms, and they are mostly of great merit. What Mr. Correvon calls the true collected form has tight rosettes of grey leaves much thickened at the apex, and arching sprays of white flowers; it is a really fine plant. Other forms have smaller, narrower leaves, with beautiful feathery sprays of white flowers in summer, and still smaller forms make hard mounds of glistening grey foliage; but it is worthy of note that the smaller forms are less free flowering, though valuable for their foliage alone.

Sax. Cotyledon is a universal favourite, forming large rosettes of broad leaves, and producing in early summer tall pyramidal sprays of white flowers often spotted with pink. *S. Cotyledon* var. *pyramidalis* is one of the spotted forms—a handsome plant forming a pyramid of blossom in early June.

Sax. Cotyledon islandica makes very large leaves and huge sprays of flowers, while another good variety is *altissima*.

Sax. crustata is a different little plant, with narrow silvery leaves, but the dull white flowers on short stalks are not of much account.

Sax. Hostii is one of the stronger growers, and should always be included. It forms handsome rosettes of strap-shaped leaves, blunter than those of *S. Cotyledon*, and produces freely large flattish panicles of white flowers spotted with pink, in June.

Sax. Kolenatiana is somewhat uncommon, but is, nevertheless, not unknown to those who have taken an interest in Saxifragas. It forms rosettes of strap-shaped leaves, having sharpish teeth, and in June or later sends up sprays of pink flowers of pretty and elegant appearance; it thrives best when not fully exposed to the sun. *S. Sendtneri* is regarded as a variety, and produces pink flowers similar to

S. lingulata Albertii is an altogether stouter plant, growing and increasing freely, flowering abundantly, producing fine sprays of white flowers in May or June. It is considered by reliable authorities to be a hybrid.

Many other intermediate forms are met with in nurseries and private collections, and they are mostly well worth growing.

Sax. longifolia, from the Pyrenees, is in some ways the most remarkable of all. It forms huge rosettes of long silvery leaves, which, when growing in a vertical crevice, are highly attractive. The inflorescence produced from the centre of the rosette is up to two feet long in vigorous specimens, forming a pyramid of beautiful pure white flowers. The plants may live and grow several years before



[Photo by]

SAXIFRAGA COCHLEARIS AT GLASNEVIN.

[W. E. Trevelick

the last named, but the leaves are longer and narrower.

Sax. Launcestoni is not a recognised species, but bears some resemblance to *S. cochlearis* and *S. lingulata* mentioned below. In any case it is a plant of great merit, forming attractive rosettes, and producing arching sprays of very beautiful white flowers. It may be a hybrid between the two species alluded to, and is certainly the equal of either from an ornamental point of view.

Sax. lingulata is a variable plant, some of its forms being among the most beautiful in the whole genus. The form known as *S. lingulata Bellardii* has long, narrow, pointed leaves, much silvered on the margins, and produces in early summer long handsome sprays of white flowers.

Sax. lingulata lutescens, to which *S. Launcestoni* seems closely related, has shorter, thicker leaves, also silvery, and produces arching sprays of elegant appearance, in contrast to the more erect inflorescence of *S. l. Bellardii*.

flowering, but die when the flowers are over, and no offsets are produced. To obtain seeds the inflorescence must be covered in with gauze to prevent cross-fertilization, otherwise the seedlings will not come true.

Sax. McNabiana is a hybrid of *S. Cotyledon* × *S. Hostii*, and a plant of great beauty. The rosettes are of medium size, rather resembling those of *Hostii*, while the flowers are most strikingly spotted with crimson dots.

Sax. caldensis is a most charming little plant, though a shy flowerer. Nevertheless, the tight little grey mounds formed of many tiny rosettes of leaves are worth having without flowers. The inflorescence is short, not more than a couple of inches or so high, bearing white flowers.

There are many hybrids in this section, nearly all of considerable merit, one of the best and most attractive being *Dr. Ramsay* (*longifolia* × *cochlearis*) a beautiful plant, producing sprays of white flowers spotted with pink.

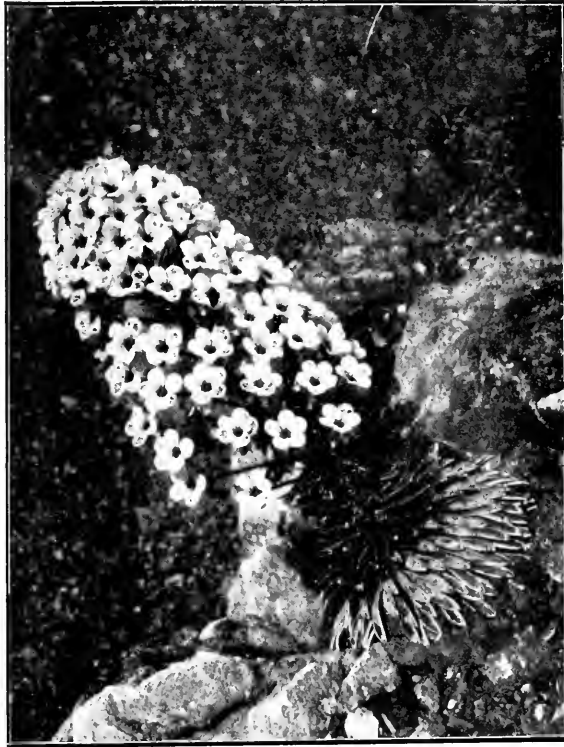
B.

Forestry:—Trees for Shelter and Ornament.

MANY forest trees are equally adapted for timber, shelter, and ornament, while others are chiefly important from the fact that their characteristic features render them better adapted for one of these purposes in particular, rather than a combination of all three. As trees adapted specially for timber growing are dealt with in Leaflet No. 67, it is unnecessary to enumerate them here; but it may be pointed out that even those are of great

posed or wind-swept districts, shelter against strong, or cold and dry winds is absolutely necessary if comfortable quarters are to be secured for cattle feeding in the open throughout the year, or attractive sites provided for farm houses or cottages.

Trees adapted for providing shelter in exposed positions must be capable of standing against the worst gales that blow, must retain their leading shoots under the influence of persistent winds, and the lower branches late in life, and must grow at a fairly rapid rate under more or less favourable conditions.



SAXIFRAGA LONGIFOLIA.

value for both shelter and ornament under many conditions of soil and situation. In certain positions and under certain circumstances, however, an attempt to obtain timber, shelter, and ornament at one and the same time will often end in failure. In these cases it is best to pay attention to only one of the features mentioned, and to plant trees best calculated to attain the principal end in view.

TREES FOR SHELTER.

In the Irish climate, shelter is chiefly required against cold or strong winds, or from hot sun. In the latter case, shelter is only needed by grazing-cattle or for dwelling-houses for a few weeks in the year at most, and it is rarely, if ever, necessary to plant trees specially to provide it. But in ex-

posed or wind-swept districts, shelter against strong, or cold and dry winds is absolutely necessary if comfortable quarters are to be secured for cattle feeding in the open throughout the year, or attractive sites provided for farm houses or cottages.

Trees adapted for providing shelter in exposed positions must be capable of standing against the worst gales that blow, must retain their leading shoots under the influence of persistent winds, and the lower branches late in life, and must grow at a fairly rapid rate under more or less favourable conditions.

Pines.—Whether for planting in the vicinity of the sea, or on exposed ground inland, no trees give more effective shelter than certain species of pines. They develop a stout and strong root system, and a thick, well-furnished evergreen crown, and on that account are quite as effective in winter as in summer.

(To be continued.)



Allotments.

GENERAL WORK.—Potatoes and other vegetables stored on the plots should be examined occasionally, and decayed Potatoes and roots removed. Needless to say, the clamps should not be opened during severe weather, and then when the heaps have been thoroughly overhauled an extra covering of soil should be given for protection in frosty weather. The remains of summer vegetables and autumn Cauliflowers should be dug up and removed to the fire heap. It is best to burn accumulated rubbish on the plot. Decayed leaves should be removed from Brussels Sprouts and Broccoli. Cauliflowers in frames should be cleaned over and examined for decay. The digging and trenching of the plot should be pushed on at every opportunity. Rhubarb can be forced quite easily by placing old tubs over the crowns, helping the forcing process with strawv litter, or spare roots may be lifted and kept in the dark in a shed or placed in a cellar.

ROTATION OF CROPS.—Everyone is aware that a farmer adopts a rotation of crops on the farm, by sowing or planting so that the crop is on a different field every year. It is advisable that some sort of rotation should be followed on the allotment, and this is understood by the majority of allotment holders, who try to plant their Potatoes on a different part of the plot to that of the previous year. However, the area of a plot is too small to adopt an elaborate system of rotation, and generally it would not be understood if suggested. But the allotment holder is wise who endeavours to plant Potatoes, Onions, Carrots, and Cabbages on a different part of the plot each year. The rotation of crops on a farm is an important feature in his system, and farmers knew the advantages of it long before the principles underlying it were understood. But once again there is a good deal of difference between a farm and a garden, and with many of the best market gardeners rotation of crops does not enter into their system of cropping at all. They dig deeply, manure highly, and plant any crop that is ready on the ground available. Nevertheless, it is quite certain that it is not a good practice to grow the same vegetables on the same land each year. Every gardener knows the advantages of growing Peas on old Celery trenches, and other instances could be quoted. Even the most ignorant of allotment holders does not sow Carrots on the same portion of ground if he has been troubled with the Carrot fly, and the same thing should apply in the case of club-root on Cabbages and Turnips. Closely allied to rotation is the systematic cropping of the allotment. By this is meant aiming to grow the most suitable kinds of vegetables for the holder's own use, and having them in succession, so that there is not a surplus

one month and a scarcity the next. Probably what is most important, a continuous supply of vegetables over as long a period as possible.

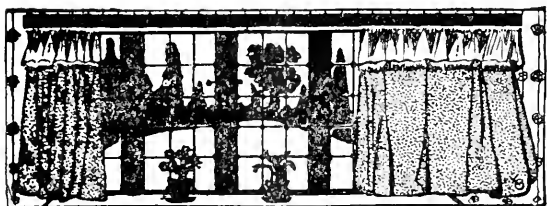
CO-OPERATION.—It is rather surprising allotment holders have not more generally adopted the co-operative system, when purchasing seeds, manures, &c. The advantages are so obvious, and many seed merchants encourage the formation of allotment societies for this purpose in offering facilities by means of liberal discount on collections of seeds. The organisation necessary is so simple, and any expenditure easily saved, because seeds could be bought more cheaply, also a saving on carriage and postage. Once the movement was started it could be developed in a surprising number of ways. As a suggestion, it would be quite possible to get a complete change of seed potatoes in a rural district by making arrangements with a local farmer to have the desired quantity sent down with his own consignment. The Plots Association in Belfast usually make arrangements and purchase artificial manures and seed potatoes in quantity, for distribution in small lots. In the case of artificial manures these can usually be obtained in the bags as received from the manufacturer or wholesale dealer, and especially with the class of article the retail shops would rather sell in bulk early in the season, to dealing with small quantities when there is a rush of orders in the spring.

VARIETIES OF VEGETABLES.—The selections of vegetables offered by seedsmen are usually so good that the question of selecting useful kinds of vegetables for the plot is a fairly easy matter. So far as is known, the kind of vegetable selected should be one that suits the district. Possibly a certain variety has been grown on an adjoining plot which has done well, and it is just as well for an allotment holder to confine himself to these well-proved sorts. The varieties of vegetables offered by seedsmen with a reputation, such as those that advertise in *IRISH GARDENING*, are always reliable and practically certain to grow. Old and worthless kinds have been eliminated from their lists, and the kinds offered can be relied upon to be true to name, which, unfortunately, cannot always be said of seedsmen who have no reputation to lose for high-class seeds, and sell anything on the get-rich-quick principle.

A COLD FRAME.—On allotments, small green-houses and frames gradually spring up, and the conglomeration of structures on some of the older allotments is wonderful. Usually, what they lack in ornament is made up in usefulness. A small frame is almost a necessity for a good allotment. There is hardly a day in the year when it is not occupied. It is valuable to winter Cauliflowers in, to start Vegetable Marrows in the spring, for inserting cuttings for the flower border. Quite good crops of Tomatoes are grown in frames. It should not be a heavy structure; in fact the lighter the better. The sides can be made with old turf, only the roof being of glass. On allotments which are exposed and windy, a strong hook and chain may be necessary to hold the roof in position.

The purpose of these monthly notes then has been to aim at a greater production on the allotment and to guide the allotment holder and owners of small gardens into an intelligent cultivation of the soil, believing that the creation of allotments under the stress of necessity can be turned also into a useful recreation. If Dean Swift be true, then the people who have turned waste places or unprofitable pasture into fruitful gardens have not only benefited thereby themselves, but have also been benefactors to their country.

G. H. O.



The Month's Work.

By T. E. TOMALIN, Gardener to the Right Hon.
The Earl of Bessborough, K.P., Bess-
borough, County Kilkenny.

THE FLOWER GARDEN.

PROTECTION should be afforded to the crowns of Gunneras and to any plants or shrubs of doubtful hardiness, such as *Cassia*, *Solanum jasminoides*, *Calceolaria integrifolia*, *Urniums*, &c. Dry bracken fern is very suitable for this purpose, and may be placed thickly around the base of the plants, or, in the case of shrubs and climbers, interspersed amongst the branches. If the fern is then covered over with green spruce boughs these will keep the material in position besides giving a tidy appearance for the winter.

Shrubberies that have become crowded should now be re-arranged by transplanting some of the shrubs and the judicious pruning of others. The Escallonias may be cut down to within a couple of feet of the ground, and will then break and form very shapely bushes in one season. When planting new shrubberies, ample room should be allowed between the more important specimens, and especially those that do not like transplantation. The intervening spaces may be filled up temporarily with the commoner shrubs, or even by planting groups of Dahlias or Michaelmas Daisies.

Lily of the Valley.—Beds of these become overcrowded after a few years, and it is then best to take up a portion of the plants, sort out the crowns, and then re-plant, on a fresh site if possible, in lines 9 inches apart, placing the crowns at 3 or 4 inches apart in the rows. The rest of the bed should be similarly treated in subsequent years. If the soil is poor, plenty of leaf soil should be added before planting. A good topdressing of this to established beds also will be very beneficial.

Clematis of the Jackmannii Section should be cut back without delay, as if this is deferred until February, as is sometimes advised, it will be found that new shoots have already pushed out above the point at which they should be cut back, this growth being, of course, at the expense of next season's flowering shoots.

Border Chrysanthemums.—A few roots of each variety should now be lifted and packed into cutting boxes for providing cuttings for next season. They may be kept in a cold frame for the winter.

THE ROCK GARDEN.

Where deciduous trees overhang the rockery care must be taken not to allow fallen leaves to accumulate on top of tender plants, or these will damp off. On the other hand, do not, in the passion for tidiness, cut off the tops from the more tender

herbaceous plants, nor the withered fronds from choice ferns. These form nature's protection to the crowns from the frosts of winter, and should not be removed until danger from this source is past.

THE FRUIT GARDEN.

Wall Trees.—Continue to transplant trees that require it on all favourable occasions, and attend to the pruning and training of those that have not been moved this winter. In pruning Plums and Pears, which have not yet covered their allotted space, it is important not to leave too long an extension of the leader each season—6 to 9 inches being an ample length. If long shoots are trained in without cutting back, their lower buds will not break, and a large part of the valuable wall space will be taken up with bare and unfruitful wood.

Pruning should be proceeded with whenever the weather is suitable—that is, when the work can be done in comparative comfort to the operator. Let those trees which require winter spraying be pruned first, so that advantage may be taken of still weather in January to perform this work. As a rule, we do not get too many days in winter suitable for spraying, and in the event of early vegetation in the spring, the trees soon become too advanced for effective spraying without risk of injury to the buds.

When the pruning of the larger fruits is finished, the bush fruits should receive attention. Gooseberries and Red and White Currants fruit mostly on spurs which are formed along the main branches. Spur-formation is encouraged by cutting hard back all side-growths of the previous season, leaving the leading shoot about 6 inches long to extend the branch. Black Currants require quite different treatment. These fruit on young wood formed the previous summer, so that care must be taken to leave enough young shoots their full length, to furnish the bush, removing such of the older branches as can be spared, and thinning out the weakest of the younger shoots. This must be done with judgment, so as to prevent overcrowding and to preserve a shapely outline to each bush.

Cuttings of bush fruits are made by selecting medium-sized shoots of the previous season, about one foot long, at pruning time and, in the case of Gooseberries and Red and White Currants, removing all the buds except five or six at the top. The base of the cutting should be cut clean across immediately below a joint. In the case of Black Currants none of the buds should be removed, because with these it is important to encourage the growth of strong shoots from the ground level or below it. In planting the cuttings a trench should be cut about 5 inches deep, and the cuttings placed about one foot apart along the upright side. The soil thrown out should then be drawn up to them and trodden firm.

The fruit store should be ventilated occasionally, and a thorough search made periodically for decaying or spotted fruits, which should be removed before they contaminate others.

THE VEGETABLE GARDEN.

On favourable days stir the soil between winter crops of Spinach, Lettuce, Cabbage, Tripoli Onions, &c., and do not allow weeds to overgrow the beds in which young seedlings are growing.

As soon as the crop has been taken from batches of Brussels Sprouts, Broccoli, Savoys, &c., let the stumps be pulled up and buried in the quarter which is being trenched; they will rot down into valuable humus, which will greatly increase the fertility of the soil. The ground thus cleared should then be ridged up for the winter. Roots

in store should be examined frequently for the removal of decaying specimens, and to prevent growth commencing on them. Parsnips and Artichokes keep best in the ground until growth commences in the spring, when any remaining should be taken up and buried in soil or ashes behind a north wall.

Tree leaves should now be collected and stacked in quantity. They will be required for mixing with stable manure in making hotbeds in January for the forcing of Rhubarb and Seakale out-of-doors, and for generating heat in pits and frames in which early vegetables are to be grown and seedlings raised.

The past season has been a favourable one in all three departments of the garden. The brilliant sunshine encouraged wonderful development and display in the flower garden, which remained in full beauty until remarkably late in the autumn. Fruit crops have been bountiful and of splendid quality, with ideal autumn weather for harvesting the more important kinds. Vegetable crops, too, have done well, especially roots and late Peas. In some districts, however, green vegetables are scarce, owing to the drought causing aphid attacks, and in several localities much damage was done by the caterpillars of the three varieties of Cabbage Butterflies.

Royal Horticultural and Arboricultural Society of Ireland.

At the monthly meeting of the Council, November 14th, it was decided that the Annual General Meeting of the Society be held at the offices, 5 Molesworth Street, Dublin, on December 17th, at 3.30 p.m. A silver medal was voted to B. H. Barton, Esq., D.L., for a fine collection of 24 dishes of Apples, tastefully set up by Mr. F. Streeter, Straffan Gardens, Co. Kildare. Cultural Certificates were also awarded to Mr. F. Bedford, The Bungalow, Leixlip, for specimens of Charles Ross, and to Mr. W. Usher, Brenanstown Garden, Cabinteely, for Peasgood's Nonsuch, a vote of thanks being accorded to R. T. Harris, Esq., LL.D., for an interesting collection of Potatoes raised by him from seeds sown April 4th, this year, all exhibited at the meeting.

The final general meeting of the Vice-Presidents and Committee of the Irish Branch of the Vegetable Products Committee, for supplying fruit and vegetables to the Navy, was held at 5 Molesworth Street, Dublin, November 21st, when Sir Frederick W. Moore and Mr. D. L. Ramsay, Hon. Secretary and Hon. Treasurer, respectively, reported the work done by the Irish Branch from its inception under the auspices of the Society from January, 1915, to July, 1919, during the whole of which period contributions of garden produce and money for the purchase of produce in the markets were generously maintained. The results of the Committee's working (Irish Branch), now definitely closed, were considered to be highly satisfactory.

In accordance with a proposal by the President, the Marquis of Headfort, the following series of Lectures has been arranged, under the auspices of the Society, which, by permission of the Royal

Dublin Society, will be given in the Theatre, Leinster House, Dublin:—

Thursday, November 27th at 8 p.m., by Mr. J. M. Toner, on Vegetables: Succession and Rotation Cropping.

Wednesday, December 3rd, 8 p.m., by Mr. R. Lloyd Praeger, B.A., on Alpines and Rock Plants.

Wednesday, December 10th, 8 p.m., Flowering Shrubs, by Sir F. W. Moore, M.R.I.A.

Wednesday, January 14th, 8 p.m., Herbaceous Plants, by Mr. J. W. Besant.

Wednesday, January 21st, 8 p.m., Apples and their Treatment, by Mr. W. S. Irving.

Wednesday, January 28th, 8 p.m., Facts about Fungoid Pests, by Professor G. H. Pethybridge, Ph.D., B.Sc.

The lectures will be illustrated by lantern slides. N.B.—Tickets (free) can be had on application to Secretary, 5 Molesworth Street.

University Appointment for Mr. J. P. Drew, A.R.C.Sc.I.

WE have much pleasure in congratulating Mr. Drew on his appointment as Lecturer in Agriculture in the National University.

Mr. Drew is well known to agriculturists in Ireland, his position, for many years, as Manager of the Albert Agricultural College Farm bringing him into contact with large numbers of people connected with agriculture. As a lecturer, Mr. Drew has been much in request, and our readers will recollect that he kindly delivered several lectures to the allotment holders in the early stages of the movement.

In addition to his scientific and practical knowledge of crops and their cultivation, Mr. Drew is highly skilled in the management of stock. The National University is to be congratulated on having secured the services of a competent agriculturist.

NOTICE

READERS are invited to submit questions bearing on gardening in any of its branches. It is our desire to stimulate and encourage gardening in Ireland, and we are in touch with experts who will be glad to give every assistance.

We are always open to consider articles, and would be glad to receive photographs—of gardens or plants—for publication, if suitable; senders will oblige by stating whether payment is desired in the event of publication.

Contributions should reach the Editor not later than the 15th of each month.

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Now that the sterner uses of the garden are passing, owners will turn their attention once more to beautifying their homes with the old English Flowers which have been brought to such perfection, and for which the homes of England were so renowned during the long years of peace. But the reconstruction of the garden must be gradual, like all other works of reconstruction which lie before us, and we must not expect during 1919 to be able to restore our flower beds and borders to the full glory of the spring and summer of 1914.

Much, however, can be done by the sowing of annuals for the summer beds, such as Aspers, Stocks, Antirrhinums, Godetias, Clarkias, and others enumerated in our Catalogue. Primulas, Begonias, and Cinerarias sown this spring will again make the greenhouse a source of interest and delight during the winter months, while Wallflowers, Polyanthus, and Pansies sown and transplanted this year will ensure a bright display in the spring of 1920.

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The following are the most common diseases of the apple tree, and their treatment. The most common is the "apple scab" which appears in autumn and is caused by a fungus. It is characterized by small, dark, scab-like spots on the leaves and fruit. The treatment is to spray the tree with a solution of sulphur and water in early summer and again in late summer. Another common disease is "apple rot" which is caused by a fungus. It is characterized by a soft, watery rot of the fruit. The treatment is to spray the tree with a solution of borax and water in late summer. A third common disease is "apple blight" which is caused by a fungus. It is characterized by a dark, necrotic area on the leaves and fruit. The treatment is to spray the tree with a solution of copper sulphate and water in late summer. A fourth common disease is "apple canker" which is caused by a fungus. It is characterized by a dark, necrotic area on the bark of the tree. The treatment is to remove the affected bark and spray the area with a solution of copper sulphate and water. A fifth common disease is "apple scale" which is caused by a scale insect. It is characterized by small, dark, scale-like insects on the leaves and fruit. The treatment is to spray the tree with a solution of kerosene and water in late summer.

CAUSES OF DISEASES OF THE APPLE TREE. The most common cause of disease is a fungus. The fungus enters the tree through the leaves and fruit. The fungus then grows and spreads throughout the tree. The fungus causes the tree to become weak and die. The treatment is to spray the tree with a solution of sulphur and water in early summer and again in late summer. Another common cause of disease is a scale insect. The scale insect enters the tree through the leaves and fruit. The scale insect then grows and spreads throughout the tree. The scale insect causes the tree to become weak and die. The treatment is to spray the tree with a solution of kerosene and water in late summer. A third common cause of disease is a scale insect. The scale insect enters the tree through the leaves and fruit. The scale insect then grows and spreads throughout the tree. The scale insect causes the tree to become weak and die. The treatment is to spray the tree with a solution of kerosene and water in late summer. A fourth common cause of disease is a scale insect. The scale insect enters the tree through the leaves and fruit. The scale insect then grows and spreads throughout the tree. The scale insect causes the tree to become weak and die. The treatment is to spray the tree with a solution of kerosene and water in late summer. A fifth common cause of disease is a scale insect. The scale insect enters the tree through the leaves and fruit. The scale insect then grows and spreads throughout the tree. The scale insect causes the tree to become weak and die. The treatment is to spray the tree with a solution of kerosene and water in late summer.

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Now that the sterner uses of the garden are passing, owners will turn their attention once more to beautifying their homes with the old English Flowers which have been brought to such perfection, and for which the homes of England were so renowned during the long years of peace. But the reconstruction of the garden must be gradual, like all other works of reconstruction which lie before us, and we must not expect during 1919 to be able to restore our flower beds and borders to the full glory of the spring and summer of 1914.

Much, however, can be done by the sowing of annuals for the summer beds, such as Asters, Stocks, Antirrhinums, Godolias, Clarkias, and others enumerated in our Catalogue. Primulas, Begonias, and Cinerarias sown this spring will again make the greenhouse a source of interest and delight during the winter months, while Wallflowers, Polyanthus, and Pansies sown and transplanted this year will ensure a bright display in the spring of 1920.

Time, thought, and money devoted to Flower Seeds in 1919 will give no less satisfaction and even greater pleasure than was derived from the vegetable garden in the war years.

One of the beneficial results of the war will be that vast numbers will find new pleasures in life that had never before occurred to them, and one of the chief of these will be their flower and vegetable gardens.

Catalogue of the most popular Vegetables and Flowers post free on application.

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TABLE 1. *Continued*

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Kelway's Wholesale Seed Catalogue.

Our readers are familiar with Messrs. Kelway's special lines in garden plants, such as Theorides, Delphiniums and many others, for which they enjoy a well-deserved fame. The present catalogue is for the season only, and private people cannot purchase seeds direct from Messrs. Kelway. They can, however, obtain Kelway's seeds from their local seedsmen, and we have no doubt that such seeds will give every satisfaction.

Dublin Wholesale Markets.

By C. L. McC.

The season of 1901 was during which the supply of the Yorks towards the end of the month was greatly diminished. Savoy or excellent quality substituting. Brass & Sprouts were well supplied all through, and the Irish quality of sprouts was an outstanding feature of the market. Cabbage was supplied in large quantities, the quality varied, good clean and choice on the whole, and very good. Looks were good, so plentiful as during the previous year. On the other hand, prices have increased in proportion to the deficiency of the supply. Cauliflowers were in good supply, some of the first class quality, but many representing a rather poor part of the supply. Cauliflowers, Brussels Sprouts, Carrots, Parsnips, &c. Beets were somewhat scarce. Wild and garden cress plentiful, and of good quality and prices. A few large cabbages were sold. Orders were sent at a moderate price, and sold at very cheap selling prices. Prices could be better, these a few months ago. Beans were supplied in moderate quantities.

Flowers were scarce during the month, the demand was heavy and prices stiff.

Apples were only supplied by the tray, and these

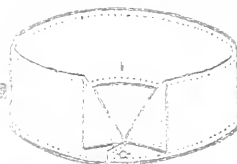
came under the controlled prices. There is no limited price for the following:—

Cox's Orange, too large to pass through a two inch ring.

The following too large to pass through a two and a half inch ring:—Allington Pippin, Beauty of Bath, Blenheim Orange, Charles Ross, Mr. Gladstone, James Greive, Ribston Pippin, King of the Pippins. All others are controlled; the fixed prices are:—November, 8d.; December and January, 9d.; afterwards 11d. per lb.

The following is a price list for the month:—

	Vegetables.	From	To
Cabbages, Yorks per head		25 0	36 0
(Savoy)		18 0	37 6
per doz.		2 6	3 0
Cauliflowers, 4s. per doz.		2 6	6 0
per doz.		1 2	2 6
Turnips per bush		0 4	0 7
" "		2 0	5 6
Beets " "		0 6	0 9
Leeks " "		0 8	1 3
" "		0 4	0 8
Sage " "		0 3	0 6
Carrots per doz.		1 0	1 6
Parsnips per doz.		5 6	—
Brussels Spr. per doz.		2 6	3 0
Parsley " "		1 0	1 9
	Flowers.		
Chrysanthemums per bunch		0 7	1 4
" "		0 6	0 10
Narcissus " "		0 6	0 9
Anna Lilies " "		0 9	1 0
	Fruit.		
Apples (only 2 seedlings) per bush		7 0	8 6



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Name

Common Name. (If any.)
 Scientific Name. (If any.)
 Locality. (If any.)

Uses. (If any.)

Remarks. (If any.)

Other Names. (If any.)

Family. (If any.)

Order. (If any.)

Class. (If any.)

Phylum. (If any.)

Division. (If any.)

Sub-division. (If any.)

Tribe. (If any.)

Genus. (If any.)

Species. (If any.)

Variety. (If any.)

Form. (If any.)

Color. (If any.)

Size. (If any.)

Weight. (If any.)

Length. (If any.)

Width. (If any.)

Depth. (If any.)

Volume. (If any.)

Area. (If any.)

Perimeter. (If any.)

Surface. (If any.)

Interior. (If any.)

Exterior. (If any.)

Base. (If any.)

Top. (If any.)

Bottom. (If any.)

Side. (If any.)

Front. (If any.)

Back. (If any.)

Left. (If any.)

Right. (If any.)

Center. (If any.)

10. September 1911. No. 11. 1911. 1911.

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GARDEN SEEDS 1919

SEED POTATOES
GARDEN SEEDS
ETC.

SEE OUR SPECIAL LIST

EDMUNDSON, ERIC & Co. Ltd., DUBLIN

Horticulture and the Cessation of Hostilities

DURING the past four years gardeners' thoughts and energies have been devoted entirely to food production, with the consequence that great developments have been made in the raising of home-grown vegetables. None who have seen the plentiful and beautiful vegetables growing in their own gardens will in the future wish to give them up.

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Catalogue of the most popular Vegetables and Flowers post free on application.

SUTTON & SONS, The Royal Seed Establishment, READING

Catalogues.

WELLS' CHRYSANTHEMUM CATALOGUE.—This useful little booklet is now available, and contains an up-to-date list of varieties for exhibition, indoor varieties for cutting and decoration, both double and single, and early flowering varieties of planting outside. Brief directions for stopping and disbudding are included. The catalogue may be obtained from W. Wells & Co., Mersham, Surrey.

SUTTON'S FARMERS' YEAR BOOK.—This valuable publication is again with us, and will be welcomed by all interested in Agriculture. Sutton's strains of roots, such as Mangolds and Turnips, enjoy a well-deserved reputation for vigour and enormous cropping properties. A volume of the Year Book is in itself an education, and the firm has spared neither time or expense in putting together a mass of information, practical and scientific, for the benefit of their numerous clients.

The illustrations are many and excellently produced, while on page 28 a first-rate table is given showing how a supply of green fodder may be provided for stock feeding all the year round.

Grasses and Clovers have always been specialties with Messrs. Sutton. In fact, the firm's publications on these are looked upon as standard works. Needless to say, the subject of laying down land to grass receives adequate attention in the present work. A special article on Wild White Clover is contributed by Prof. Geo. W. Sanborn, M.A., D.Sc., F.R.S., who experimented with this Clover on his farm in Sussex, an account of which appeared in the *Journal of the Board of Agriculture*, February, 1915. Every farm manager would do well to secure a copy of Sutton's *Farmers' Year Book*.

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Figure 1 is a schematic representation of the experimental design. It shows a sequence of events: 'Stimulus presentation' (a box with a question mark), 'Response' (a box with a hand icon), 'Feedback' (a box with a checkmark), and 'Inter-trial interval' (a box with a clock icon). The sequence is repeated for multiple trials, with a 'Start' box at the beginning and an 'End' box at the end.

Journal of Management Inquiry 16(4) 407-428
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APPENDICES

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JACQUES DUBOIS, I. R. J.

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Figure 1: Schematic representation of the experimental design. The figure is divided into two main sections: 'Pretest' and 'Main Experiment'. The 'Pretest' section shows a flow from 'Pretest' to 'Pretest Results' (with a 'Pretest Results' box) and 'Pretest Results' to 'Pretest Results' (with a 'Pretest Results' box). The 'Main Experiment' section shows a flow from 'Main Experiment' to 'Main Experiment Results' (with a 'Main Experiment Results' box) and 'Main Experiment Results' to 'Main Experiment Results' (with a 'Main Experiment Results' box).

Figure 1. The effect of the concentration of the *Agaricus bisporus* spores on the growth of *Agaricus bisporus* on the substrate. The concentration of the spores was 10⁴ spores/ml (○), 10⁵ spores/ml (□), 10⁶ spores/ml (△), 10⁷ spores/ml (◇), 10⁸ spores/ml (×), 10⁹ spores/ml (●), 10¹⁰ spores/ml (◊), 10¹¹ spores/ml (◐), 10¹² spores/ml (◑), 10¹³ spores/ml (◒), 10¹⁴ spores/ml (◓), 10¹⁵ spores/ml (◔), 10¹⁶ spores/ml (◕), 10¹⁷ spores/ml (◖), 10¹⁸ spores/ml (◗), 10¹⁹ spores/ml (◘), 10²⁰ spores/ml (◙), 10²¹ spores/ml (◚), 10²² spores/ml (◛), 10²³ spores/ml (◜), 10²⁴ spores/ml (◝), 10²⁵ spores/ml (◞), 10²⁶ spores/ml (◟), 10²⁷ spores/ml (◠), 10²⁸ spores/ml (◡), 10²⁹ spores/ml (◢), 10³⁰ spores/ml (◣), 10³¹ spores/ml (◤), 10³² spores/ml (◥), 10³³ spores/ml (◦), 10³⁴ spores/ml (◧), 10³⁵ spores/ml (◨), 10³⁶ spores/ml (◩), 10³⁷ spores/ml (◪), 10³⁸ spores/ml (◫), 10³⁹ spores/ml (◬), 10⁴⁰ spores/ml (◭), 10⁴¹ spores/ml (◮), 10⁴² spores/ml (◯), 10⁴³ spores/ml (◰), 10⁴⁴ spores/ml (◱), 10⁴⁵ spores/ml (◲), 10⁴⁶ spores/ml (◳), 10⁴⁷ spores/ml (◴), 10⁴⁸ spores/ml (◵), 10⁴⁹ spores/ml (◶), 10⁵⁰ spores/ml (◷), 10⁵¹ spores/ml (◸), 10⁵² spores/ml (◹), 10⁵³ spores/ml (◺), 10⁵⁴ spores/ml (◻), 10⁵⁵ spores/ml (◼), 10⁵⁶ spores/ml (◽), 10⁵⁷ spores/ml (◾), 10⁵⁸ spores/ml (◿), 10⁵⁹ spores/ml (◠), 10⁶⁰ spores/ml (◡), 10⁶¹ spores/ml (◢), 10⁶² spores/ml (◣), 10⁶³ spores/ml (◤), 10⁶⁴ spores/ml (◥), 10⁶⁵ spores/ml (◦), 10⁶⁶ spores/ml (◧), 10⁶⁷ spores/ml (◨), 10⁶⁸ spores/ml (◩), 10⁶⁹ spores/ml (◪), 10⁷⁰ spores/ml (◫), 10⁷¹ spores/ml (◬), 10⁷² spores/ml (◭), 10⁷³ spores/ml (◮), 10⁷⁴ spores/ml (◯), 10⁷⁵ spores/ml (◰), 10⁷⁶ spores/ml (◱), 10⁷⁷ spores/ml (◲), 10⁷⁸ spores/ml (◳), 10⁷⁹ spores/ml (◴), 10⁸⁰ spores/ml (◵), 10⁸¹ spores/ml (◶), 10⁸² spores/ml (◷), 10⁸³ spores/ml (◸), 10⁸⁴ spores/ml (◹), 10⁸⁵ spores/ml (◺), 10⁸⁶ spores/ml (◻), 10⁸⁷ spores/ml (◼), 10⁸⁸ spores/ml (◽), 10⁸⁹ spores/ml (◾), 10⁹⁰ spores/ml (◿), 10⁹¹ spores/ml (◠), 10⁹² spores/ml (◡), 10⁹³ spores/ml (◢), 10⁹⁴ spores/ml (◣), 10⁹⁵ spores/ml (◤), 10⁹⁶ spores/ml (◥), 10⁹⁷ spores/ml (◦), 10⁹⁸ spores/ml (◧), 10⁹⁹ spores/ml (◨), 10¹⁰⁰ spores/ml (◩), 10¹⁰¹ spores/ml (◪), 10¹⁰² spores/ml (◫), 10¹⁰³ spores/ml (◬), 10¹⁰⁴ spores/ml (◭), 10¹⁰⁵ spores/ml (◮), 10¹⁰⁶ spores/ml (◯), 10¹⁰⁷ spores/ml (◰), 10¹⁰⁸ spores/ml (◱), 10¹⁰⁹ spores/ml (◲), 10¹¹⁰ spores/ml (◳), 10¹¹¹ spores/ml (◴), 10¹¹² spores/ml (◵), 10¹¹³ spores/ml (◶), 10¹¹⁴ spores/ml (◷), 10¹¹⁵ spores/ml (◸), 10¹¹⁶ spores/ml (◹), 10¹¹⁷ spores/ml (◺), 10¹¹⁸ spores/ml (◻), 10¹¹⁹ spores/ml (◼), 10¹²⁰ spores/ml (◽), 10¹²¹ spores/ml (◾), 10¹²² spores/ml (◿), 10¹²³ spores/ml (◠), 10¹²⁴ spores/ml (◡), 10¹²⁵ spores/ml (◢), 10¹²⁶ spores/ml (◣), 10¹²⁷ spores/ml (◤), 10¹²⁸ spores/ml (◥), 10¹²⁹ spores/ml (◦), 10¹³⁰ spores/ml (◧), 10¹³¹ spores/ml (◨), 10¹³² spores/ml (◩), 10¹³³ spores/ml (◪), 10¹³⁴ spores/ml (◫), 10¹³⁵ spores/ml (◬), 10¹³⁶ spores/ml (◭), 10¹³⁷ spores/ml (◮), 10¹³⁸ spores/ml (◯), 10¹³⁹ spores/ml (◰), 10¹⁴⁰ spores/ml (◱), 10¹⁴¹ spores/ml (◲), 10¹⁴² spores/ml (◳), 10¹⁴³ spores/ml (◴), 10¹⁴⁴ spores/ml (◵), 10¹⁴⁵ spores/ml (◶), 10¹⁴⁶ spores/ml (◷), 10¹⁴⁷ spores/ml (◸), 10¹⁴⁸ spores/ml (◹), 10¹⁴⁹ spores/ml (◺), 10¹⁵⁰ spores/ml (◻), 10¹⁵¹ spores/ml (◼), 10¹⁵² spores/ml (◽), 10¹⁵³ spores/ml (◾), 10¹⁵⁴ spores/ml (◿), 10¹⁵⁵ spores/ml (◠), 10¹⁵⁶ spores/ml (◡), 10¹⁵⁷ spores/ml (◢), 10¹⁵⁸ spores/ml (◣), 10¹⁵⁹ spores/ml (◤), 10¹⁶⁰ spores/ml (◥), 10¹⁶¹ spores/ml (◦), 10¹⁶² spores/ml (◧), 10¹⁶³ spores/ml (◨), 10¹⁶⁴ spores/ml (◩), 10¹⁶⁵ spores/ml (◪), 10¹⁶⁶ spores/ml (◫), 10¹⁶⁷ spores/ml (◬), 10¹⁶⁸ spores/ml (◭), 10¹⁶⁹ spores/ml (◮), 10¹⁷⁰ spores/ml (◯), 10¹⁷¹ spores/ml (◰), 10¹⁷² spores/ml (◱), 10¹⁷³ spores/ml (◲), 10¹⁷⁴ spores/ml (◳), 10¹⁷⁵ spores/ml (◴), 10¹⁷⁶ spores/ml (◵), 10¹⁷⁷ spores/ml (◶), 10¹⁷⁸ spores/ml (◷), 10¹⁷⁹ spores/ml (◸), 10¹⁸⁰ spores/ml (◹), 10¹⁸¹ spores/ml (◺), 10¹⁸² spores/ml (◻), 10¹⁸³ spores/ml (◼), 10¹⁸⁴ spores/ml (◽), 10¹⁸⁵ spores/ml (◾), 10¹⁸⁶ spores/ml (◿), 10¹⁸⁷ spores/ml (◠), 10¹⁸⁸ spores/ml (◡), 10¹⁸⁹ spores/ml (◢), 10¹⁹⁰ spores/ml (◣), 10¹⁹¹ spores/ml (◤), 10¹⁹² spores/ml (◥), 10¹⁹³ spores/ml (◦), 10¹⁹⁴ spores/ml (◧), 10¹⁹⁵ spores/ml (◨), 10¹⁹⁶ spores/ml (◩), 10¹⁹⁷ spores/ml (◪), 10¹⁹⁸ spores/ml (◫), 10¹⁹⁹ spores/ml (◬), 10²⁰⁰ spores/ml (◭), 10²⁰¹ spores/ml (◮), 10²⁰² spores/ml (◯), 10²⁰³ spores/ml (◰), 10²⁰⁴ spores/ml (◱), 10²⁰⁵ spores/ml (◲), 10²⁰⁶ spores/ml (◳), 10²⁰⁷ spores/ml (◴), 10²⁰⁸ spores/ml (◵), 10²⁰⁹ spores/ml (◶), 10²¹⁰ spores/ml (◷), 10²¹¹ spores/ml (◸), 10²¹² spores/ml (◹), 10²¹³ spores/ml (◺), 10²¹⁴ spores/ml (◻), 10²¹⁵ spores/ml (◼), 10²¹⁶ spores/ml (◽), 10²¹⁷ spores/ml (◾), 10²¹⁸ spores/ml (◿), 10²¹⁹ spores/ml (◠), 10²²⁰ spores/ml (◡), 10²²¹ spores/ml (◢), 10²²

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Figure 1. The effect of the concentration of the polymer solution on the apparent viscosity of the polymer solution. The apparent viscosity of the polymer solution increases with the concentration of the polymer solution. The apparent viscosity of the polymer solution is 1.5 Pa·s at 0.5 wt% and 1.0 Pa·s at 0.2 wt%.

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971).

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SECRET

(a) Uniform pipe cross-section

(b) Pipe cross-section with a localized corrosion pit

(c) Pipe cross-section with a large, deep corrosion pit

[illegible]

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1. *Journal of the American Medical Association*, 1997; 278: 1023-1028.

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Department of Agriculture and Technical Instruction, Ireland.

LIST OF THE DEPARTMENT'S LEAFLETS

No.	Name.	No.	Name.
1	The Warble Fly.	51	Flax-Grading Experiments.
2	The Use and Purchase of Feeding-stuffs.	52	The Construction of a Corn-
3	Footrot in Sheep.	53	Distillation of Potatoes.
4	The Sale of Flax.	54	Distillation of Potatoes.
5	Celery Leaf-Spot Disease and its Cure.	55	Distillation of Potatoes.
6	Charlock for Preshaugh, Spoke, and	56	Distillation of Potatoes.
7	Fluke in Sheep.	57	Distillation of Potatoes.
8	Timothy Meadows.	58	Distillation of Potatoes.
9	The Lamb Fly.	59	Distillation of Potatoes.
10	Wireworms.	60	Distillation of Potatoes.
11	Prevention of White Scour in Cattle.	61	Distillation of Potatoes.
12	Liquid Manure.	62	Distillation of Potatoes.
13	Contagious Abortion in Cattle.	63	Distillation of Potatoes.
14	Prevention of Potato Blight.	64	Distillation of Potatoes.
15	Milk Records.	65	Distillation of Potatoes.
16	Sheep Scab.	66	Distillation of Potatoes.
17	The Use and Purchase of Fertilisers.	67	Distillation of Potatoes.
18	Swine Fever.	68	Distillation of Potatoes.
19	Early Potatoes Growing.	69	Distillation of Potatoes.
20	Calf Rearing.	70	Distillation of Potatoes.
21	Diseases of Poultry—Gapes.	71	Distillation of Potatoes.
22	Basic Slag.	72	Distillation of Potatoes.
23	Dishorning Calves.	73	Distillation of Potatoes.
24	Care and Treatment of French Fly.	74	Distillation of Potatoes.
25	Fowl Cholera.	75	Distillation of Potatoes.
26	Winter Fattening of Cattle.	76	Distillation of Potatoes.
27	Breeding and Feeding of Pigs.	77	Distillation of Potatoes.
28	Blackleg, Black Quarter, or Bluetongue.	78	Distillation of Potatoes.
29	Flax Seed.	79	Distillation of Potatoes.
30	Poultry Parasites—Fleas, Mites, and Lice.	80	Distillation of Potatoes.
31	Winter Egg Production.	81	Distillation of Potatoes.
32	Rearing and Fattening of Turkeys.	82	Distillation of Potatoes.
33	Profitable Breeds of Poultry.	83	Distillation of Potatoes.
34	The Revival of Tillage.	84	Distillation of Potatoes.
35	The Liming of Land.	85	Distillation of Potatoes.
36	Field Experiments—Barley.	86	Distillation of Potatoes.
37	" " " Meadow Hay.	87	Distillation of Potatoes.
38	" " " Potatoes.	88	Distillation of Potatoes.
39	" " " Mangolias.	89	Distillation of Potatoes.
40	" " " Oats.	90	Distillation of Potatoes.
41	" " " Turnips.	91	Distillation of Potatoes.
42	Permanent Pasture Grasses.	92	Distillation of Potatoes.
43	The Rearing and Management of Chickens.	93	Distillation of Potatoes.
44	"Husk" or "Hoose" in Calves.	94	Distillation of Potatoes.
45	Ringworm on Cattle.	95	Distillation of Potatoes.
46	Haymaking.	96	Distillation of Potatoes.
47	The Black Currant Mite.	97	Distillation of Potatoes.
48	Foul Brood or Bee Pest.	98	Distillation of Potatoes.
49	Poultry Fattening.	99	Distillation of Potatoes.
50	Portable Poultry Houses.	100	Distillation of Potatoes.
51	The Leather-Jacket Grub.	101	Distillation of Potatoes.
52	Flax Grading Experiments.	102	Distillation of Potatoes.
53	The Construction of a Corn-	103	Distillation of Potatoes.
1	Chickens—Spring Fertilisers.	104	Distillation of Potatoes.
2	Autumn Sown Cereals.	105	Distillation of Potatoes.
3	Eggs and Poultry.	106	Distillation of Potatoes.
4	Out of Print.	107	Distillation of Potatoes.
5	Sowing of Spring Wheat.	108	Distillation of Potatoes.
6	Winter Manuring—Grass.	109	Distillation of Potatoes.
7	Out of Print.	110	Distillation of Potatoes.
8	Destruction of Farm Pests.	111	Distillation of Potatoes.
9	Out of Print.	112	Distillation of Potatoes.
10	Pig Feeding—Need for Food.	113	Distillation of Potatoes.
11	Poultry Feeding—The Need.	114	Distillation of Potatoes.
12	Digging and Spring Potatoes.	115	Distillation of Potatoes.
13	Sulphate of Ammonia.	116	Distillation of Potatoes.
14	Compensating Sowing of Flax.	117	Distillation of Potatoes.

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Royal Horticultural & Arboricultural Society of Ireland

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Royal Horticultural and Arboricultural Society of Ireland.

The monthly meeting of the Council was held at the offices, 5, Molesworth Street, Dublin, on the 9th ult. Mr. F. V. Westby, D.L., presiding. Judges were nominated for the Show to be held on the 11th and 12th inst., in conjunction with the Royal Dublin Society's Show at Ballsbridge, entries for which closed on the 4th inst. The schedule as now issued, with its liberal price list, warrants the Council in anticipating a display creditable to the Society, in spite of the rain being not what might be termed the best for it, but classes have been specially framed to meet the best things of the season. A letter was read from Mr. G. Watson, explaining his absence from the Council through illness, and it was decided in view of Mr. Watson's long and valued services to the Society to ask him to postpone the matter for three months. A fine display was made out the Council's inspection by Mr. F. Sweeney, from Straffan Gardens, Co. Kildare, a silver medal being awarded to him for a collection of vegetables, each kind named and bearing dates of sowing; a Cultural Certificate being awarded to him for a group of *Schizanthus*, which, with a group of well-grown *Chinerias*, contributed to the interest of the meeting.

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Society will hold a Summer Exhibition on June 11th and 12th in the Royal Dublin Society's grounds at Ballsbridge. We desire to draw attention to the Schedule and the handsome prizes offered therein for flowers, fruits and vegetables.

Given favourable weather this Exhibition should be one of the features of the season, and we confidently look forward to a magnificent display worthy of the best traditions of Irish gardening. We respectfully urge employers to encourage their gardeners to exhibit and take an interest in supporting the Irish Society, and likewise we would ask gardeners in all parts of Ireland to do their best to make the exhibition a huge success. There is no doubt whatever that such gatherings do an immense amount of good in stimulating an interest in horticulture, both economic and ornamental, and thereby do much to raise the status of gardening and gardeners.

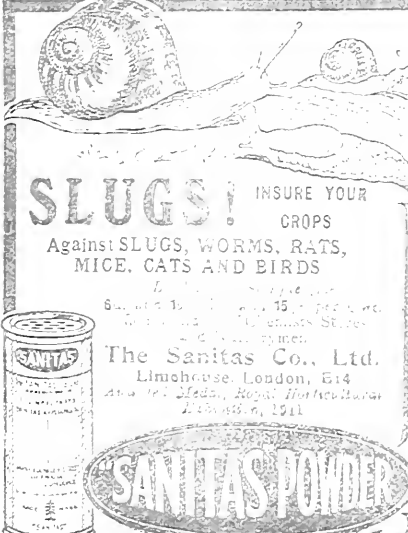
Show Fixtures, 1919.

- June 11 Royal Horticultural and Arboretum & 12 Society of Ireland at Royal Dublin Society's Premises, Ballsbridge.
- July 18 Irish Rose and Floral Society, at Bonmahon Gardens, Belmest. Entries close July 11. F. J. Davis, Hon. Sec. Abingdon, Holywood, Co. Down.
- July 19 Terenure and District Horticultural Society, at Bushy Park, Terenure. Entries close July 12. Hon. Sec. E. Carroll, 1 Rossmore Terrace, Rathgar.

Obituary.

MR. THOMAS SMITH

As we go to Press we learn, with deep regret, of the death of the veteran proprietor of Daisy Hill Nurseries, Newry. No personality was better known in Irish gardening circles, and, indeed, far beyond the confines of Ireland. Our deepest sympathy goes out to the members of his family left to mourn his loss. In our next issue we hope to refer more fully to his life and work.



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Dublin Wholesale Markets.

DURING the month of May the variety of vegetables, fruit and flowers has been steadily increasing, and many stands that were empty all winter are now packed daily. Still the prices realised were good and showed no signs of a glut of any commodity except cauliflowers. Rhubarb was supplied in huge quantities, and yet it met with a brisk and ready demand. Cauliflowers were more plentiful than formerly, and their prices have been reduced since there are other vegetables to take their place. Cabbages are not up to time this season, and the supply during the early part of the month was of rather immature quality. Towards the end of the month both the supply and quality have been much improved, and prices have been modified accordingly. Lettuce and Spinach are not yet being supplied in any appreciable quantities, and good quality

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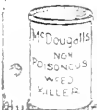
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No.	Name	No.	Name
1	The Wasp Fly.	51	The Experiment of Weaning.
2	The Care and Purchase of Feeding Stalls.	52	The Management of Cows.
3	Footrot in Sheep.	53	The "Rabbit" or "Rabbit" Murrain in Rabbits.
4	The Sale of Flax.	54	The Uses of Fruit and its for cultivation.
5	Canary-Lark-Spot Disease of Pigeons.	55	The Management of Waste Lands.
6	Charcoal or Freshwater Spots on Fluke in Sheep.	56	The Process, Method of Planting Forest Trees.
7	Timothy Meadows.	57	Selection of Trees for Poles and Timber.
8	The Taro Fly.	58	Selection of Trees for Shelter and Ornament.
9	Wireworms.	59	The Prevention of Tuberculosis in Cattle.
10	Prevention of White Scum in Potatoes.	60	The Management of Plantations.
11	Liquid Manure.	61	The Management of Pigs.
12	Contagion of Abortion in Cattle.	62	The Raising and Management of Rabbits.
13	Prevention of Potato Blight.	63	The Selection of Parasites of the Sheep.
14	Milk Meters.	64	The Management of the Grass.
15	Sheep Scum.	65	The Management of Young Cattle.
16	The Care and Purchase of Land.	66	Home Watermaking.
17	Swine Manure.	67	The Selection of Seed Fruits.
18	Early Poultry Growing.	68	The Selection of Seed Fruits.
19	Can Raising.	69	The Selection of Seed Fruits.
20	Diseases of Poultry—Gapes.	70	The Selection of Seed Fruits.
21	Basin Stew.	71	The Selection of Seed Fruits.
22	Dishorning Calves.	72	The Selection of Seed Fruits.
23	Care and Treatment of Preadmining.	73	The Selection of Seed Fruits.
24	Fowl Cholera.	74	The Selection of Seed Fruits.
25	Winter Fattening of Cattle.	75	The Selection of Seed Fruits.
26	Breeding and Feeding of Pigs.	76	The Selection of Seed Fruits.
27	Blackleg, Black Quarter, or Blue Quarter.	77	The Selection of Seed Fruits.
28	Flax Seed.	78	The Selection of Seed Fruits.
29	Poultry Lark-Spot—Flea—Mite—Louse.	79	The Selection of Seed Fruits.
30	Winter Egg Production.	80	The Selection of Seed Fruits.
31	Reading and Fattening of Turkeys.	81	The Selection of Seed Fruits.
32	Products and Seeds of Poultry.	82	The Selection of Seed Fruits.
33	The Reeling of Linen.	83	The Selection of Seed Fruits.
34	The Raising of Lamb.	84	The Selection of Seed Fruits.
35	Flax Tree—Lime—Madder.	85	The Selection of Seed Fruits.
36	"Mush" or "Hoose" in Calves.	86	The Selection of Seed Fruits.
37	Ringworm on Cattle.	87	The Selection of Seed Fruits.
38	Haymaking.	88	The Selection of Seed Fruits.
39	The Black Currant Mite.	89	The Selection of Seed Fruits.
40	Fowl Mite or Bee Pest.	90	The Selection of Seed Fruits.
41	Poultry Fattening.	91	The Selection of Seed Fruits.
42	Poultry Houses.	92	The Selection of Seed Fruits.
43	The Leather-Jacket Crab.	93	The Selection of Seed Fruits.
44	Flax Dyeing Experiments.	94	The Selection of Seed Fruits.
45	The Construction of a Cattle Pen.	95	The Selection of Seed Fruits.
46	Cow and Cows—Spring Feeding.	96	The Selection of Seed Fruits.
47	Agony of the Sheep.	97	The Selection of Seed Fruits.
48	Eggs of the Sheep.	98	The Selection of Seed Fruits.
49	Agony of the Sheep.	99	The Selection of Seed Fruits.
50	Sowing of Spring Wheat.	100	The Selection of Seed Fruits.
51	Winter Fattening—Grass Land.	101	The Selection of Seed Fruits.
52	Overfeeding.	102	The Selection of Seed Fruits.
53	Desinfection of Farm Pools.	103	The Selection of Seed Fruits.
54	Pig Feeding—Need for Food.	104	The Selection of Seed Fruits.
55	Poultry Feeding—The Need for Food.	105	The Selection of Seed Fruits.
56	Feeding and Storing Potatoes.	106	The Selection of Seed Fruits.
57	Storing of Potatoes.	107	The Selection of Seed Fruits.
58	Compulsory Sowing of Flax.	108	The Selection of Seed Fruits.

Copies of the above Leaflets can be obtained FREE OF CHARGE and post free, on application to the Secretary, Department of Agriculture and Technical Instruction for Ireland, Upper Merrion Street, Dublin. Letters of application should be accompanied by stamped and addressed envelopes should be marked "Lectures."



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Is invaluable as an aid to the Gardener in the successful cultivation of Fruit, Flowers, and Vegetables.

By its quick action on vegetation, Maturity is hastened, and vegetables are improved in flavour, the tissue being tender, crisp, and less fibrous. This feature is particularly noticeable in Lettuce, Cabbage, and the whole of the Brassica tribe of plants. In application, "Nitrate and Bone" is productive of the best results. If used in conjunction with phosphates and potash, half the usual quantity of dung need only be used.

Full particulars and pamphlets on "Manuring in the Garden" will be sent free on application.

Send for Pamphlet "Chemical Fertilizers in the Garden" supplied gratis and post free by

The Chilean Nitrate Committee, Friars House, New Broad St. London, E.C.

And 25 CHICHESTER STREET, BELFAST

There is no significant difference ($P > 0.05$) in the absence of *X. sp.* among the 1888 and 1988 samples maintained, and it is not possible to attribute *X. sp.* to the work done in maintaining and growing the horticultural side of the display of special importance to the general public and the scientific community, coupled with the important work of specimen herbarium, as directed much to the collection of plants and their uses.

The individual reports by a responsible member of the staff are extremely interesting and inspiring, and it is essentially motivating to learn of the continuing interest in the gardens of the visiting students, and we congratulate the Director on the success of his efforts and those of his staff.

During the month the supply of vegetables was not what might be expected for the time of year. Owing to the fine weather such vegetables as Cabbages, Lettuce, Spinach, and all soft growing stuff have been very much retarded in growth; however, the supply was not bad considering the prevailing circumstances. There were some Peas of medium quality, which sold at handsome prices. Rhubarb was supplied in large quantities and yet the prices of some was kept at a comparatively high figure. Early Potatoes were not exceptionally good and the prices realised would hardly justify one in growing the crop. Turnips have become very scarce and the prices have gone up in leaps and bounds. Some of us were plentiful and sold readily. Mushrooms and potatoes were steadily supplied in quantities well up to the ready demand. The only special crop was Strawberry.

Effect of temperature on the life span of strawberries



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able Manure, also Special
Top-dressing Manure are ever
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FROM INSECT PESTS
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FOR SUMMER SPRAYING

A Nicotine Preparation for Apple-Sucker, Greenfly,
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Sold in Qt. Tins: 1, 2, 5, and 10 Gall. Drums;
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Kills Weeds on Garden Paths and Gravelled Spaces.
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The first of these is the *business case* for sustainability. The business case is the most common and most widely understood of the three cases. It is the case that focuses on the financial benefits of sustainability. The business case is the most common and most widely understood of the three cases. The business case is the most common and most widely understood of the three cases.

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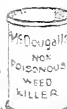
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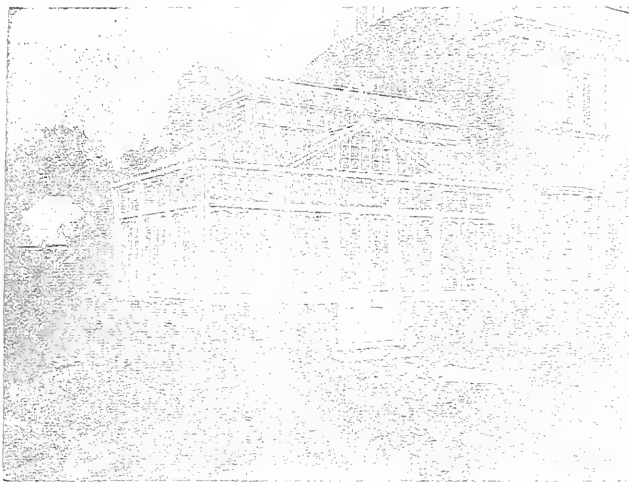
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Catalogues

MESSRS. SUTTON & SONS have favoured us with a copy of their new bulb catalogue. It is handsomely illustrated, printed on high-class paper, and contains selections of all the most beautiful and popular bulbs for beds, pots, bowls and naturalizing.

MESSRS. ROWAN & CO., of Capel Street, Dublin, have issued a timely, attractive and comprehensive list of seeds for autumn sowing. Rowan's customers are many, a sufficient commentary on the excellence of their seeds, and those who contemplate having well-stocked gardens and plots next spring and early summer must needs take the opportunity of looking through Messrs. Rowan's excellent list.

MESSRS. WEEB, of Sparbridge, have issued a new and up-to-date catalogue of bulbs and roots for

autumn and spring planting. Both outdoor and indoor plants are offered in fine variety, and it is a matter for congratulation that such a fine list should be available so soon after the war. Printed on good paper and of a convenient size, intending purchasers have every facility for making a rapid selection from among the many varieties of all kinds of bulbs and other roots offered.

We have received the autumn bulb list of the Daisy Hill Nurseries, Newry, and find that under the care of Mr. & N. Smith the Daisy Hill collection of bulbous plants retains all its richness and interest. In addition to the best of the popular Daffodils, Darwin and May-flowering Tulips, many bulbs are offered which are not found in every catalogue, but which ought to be in every garden. The species of Tulip now receiving more attention are represented by over a dozen, while Alliums, Anemones of many kinds, Anemone, Brodiaeas, Camassias, Colchicums and Crocus species are only a few of the many charming bulbous and cormus plants which add so much to delight our gardens at various seasons.

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blooms in the Show, a fine specimen of the Champion Class. His exhibit containing two blooms which were awarded medals, namely—Geo. Dickson and Elizabeth O'Connell.

As is frequently the case, one Rose seems to dominate a particular show, and on this occasion it was Ophelia, which was in beautiful form on every side. Other sorts specially noticed on this occasion were K. of K., Golden Ophelia, Elizabeth Cullen, Red Cross, Lady Harrington, Covent Garden and Lady Pirie.

If any reader has seen the polyantha named Miss Ada Frend, he would be glad to hear his opinion about it. As shown in one of the nursery stands, the semi-double flowers with lovely golden anthers were very beautiful.

J. M. W.

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Dublin Wholesale Markets.

SUPPLIES of fruit of seasonable variety good, and prices were rather encouraging from the grower's point of view. Gooseberries have been especially profitable, and may be interesting to plant the ripe "Ambers" secured at the highest prices—6s. 6d. to 7s. 6d. per 12 in a basket. Strawberries were supplied in large quantities and the price has been a good deal lower than last year, but still profitable. Black and Red Currants, at good prices, but prices are a falling off in the value of Reds, owing to the glut of the market. Rhubarb is still well supplied for the time of year, but the price has fallen. For the past two years it has not sold a big and ready sale, and now, for the first time during that period, it is showing a tendency to be scarce and prices. Cabbages are being offered in large quantities; the demand is still falling. White Turnips have become more plentiful, but the long and yellow are falling steadily. Turnips, the common variety, in the month the price is 1s. 6d. per cwt. and 1s. 6d. in the month. Potatoes, the common variety, in the month, 15s. to 16s. per cwt. and 1s. 11s. and 12s. towards the end. White Turnips are eagerly sought, and run a couple of shillings more per cwt. than others.

Flowers, as usual, are in a ready demand. The principal subjects are the following:—Marigolds

and Perennials, Gladioli Delphiniums, Canterbury Bells, Antirrhinums and Roses.

The following is a price list for the month:—

Vegetables.		From		To	
		s. d.	s. d.	s. d.	s. d.
Cabbages	per load	30	0	65	0
Cauliflowers	per doz.	3	0	6	0
Lettuce	per doz.	0	6	0	8
Turnips	per bunch	0	4	0	8
Scaliflowers	per bunch	0	4	0	8
Spinach	per float	0	8	1	0
Carrots	per doz. bunches	1	3	1	10
Pars	per float	3	0	6	0
Marrows	each	0	9	1	4
Parsley	per float	0	6	0	9
Tyme	per bunch	0	1	0	1
Mint	per bunch	0	1	0	2
Cucumbers	per doz.	2	6	10	0
Rhubarb	per doz. bunches	2	0	3	6
Potatoes, 1st	per cwt.	11	0	17	0
Potatoes, 2nd	per cwt.	8	0	12	0
Fruit.					
Gooseberries	per bkt. 12 lb.	5	0	7	6
Black Currants	per lb.	0	9	1	1
Red Currants	per lb.	0	6	0	10
Strawberries	per lb.	1	2	1	10
Peaches	per doz.	9	0	30	0
Cherries	per lb.	1	0	1	4
Grapes (Black)	per lb.	3	6	5	0

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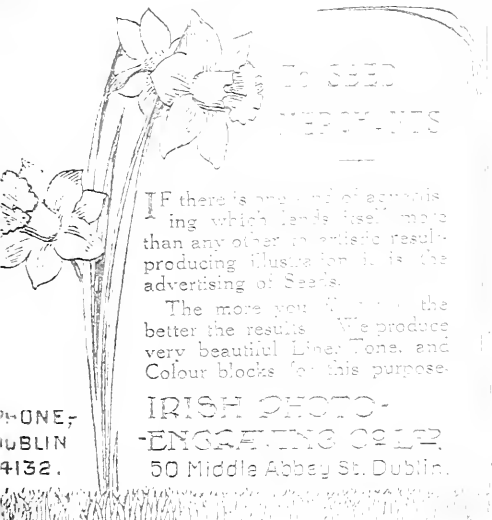
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Department of Agriculture and Technical Instruction for Ireland.

LIST OF THE DEPARTMENT'S LEAFLETS.

No.	Name	No.	Name
1	The Warble Fly	44	Calf Measles.
2	The Use and Purchase of Feeding Stuffs	45	The Apple.
3	Footrot in Sheep.	46	Cultivation of the Root Crop
4	The Sale of Flax	47	Marketing of Fruit.
5	Celery Leaf-Spot Disease or Blight	48	Sprouting Seed Potatoes.
6	Charlock (or Preshaugh) Spraying	49	Testing of Farm Seeds.
7	Fluke in Sheep.	50	<i>Onion Plant.</i>
8	Timothy Meadows.	51	Field Experiments—Wheat.
9	The Turnip Fly.	52	The Management of Dairy Cows.
10	Wireworms.	53	"Rouge" or "Blood" Murrain in Cattle.
11	Prevention of White Scour in Calves.	54	Viruses of Fruit suitable for cultivation in Ireland.
12	Liquid Manure.	55	Forestry: The Planting of Waste Lands.
13	Contagious Abortion in Cattle.	56	Forestry: The Proper Method of Planting Forest Trees.
14	Prevention of Potato Blight.	57	Forestry: Trees for Poles and Timber.
15	Milk Records.	58	Forestry: Trees for Shelter and Ornament.
16	Sheep Scab.	59	The Prevention of Tuberculosis in Cattle.
17	The Use and Purchase of Manures.	60	Forestry: Planting, Management, and Preservation of Shelter-Belt and Hedgerow Timber.
18	Swine Fever.	61	Forestry: The Management of Plantations.
19	Early Potato Growing.	62	<i>Use of Foliage.</i>
20	Calf Rearing.	63	The Planting and Management of Foreign Trees.
21	Diseases of Poultry—Chicks.	64	Some Common Parasites of the Sheep
22	Basic Slag.	65	Briley Scabbing.
23	Dishorning Calves.	66	American Gooseberry Mildew.
24	Care and Treatment of Premium Bulls.	67	Scour and Wasting in Young Cattle
25	Fowl Cholera.	68	Home Buttermaking.
26	Winter Fattening of Cattle.	69	The Cultivation of Small Fruits
27	Breeding and Feeding of Eggs.	70	Catch Crops.
28	Blackleg, Black Quarter, and other Diseases of Flax Seed.	71	Potato Culture on Small Farms.
29	Poultry Parasites—Ticks, Mites, and Lice.	72	Cultivation of Main Crop Potatoes.
30		73	Cultivation of Onions.
31	Winter Egg Production.	74	Onions.
32	Rearing and Fattening of Goats.	75	Some Potentially Orchard Insects
33	Profitable Breeds of Poultry.	76	Dairy Milk.
34	The Revival of Tillage.	77	Barley Tares and.
35	The Liming of Land.	78	The Home Rearing of Fruit.
36	Field Experiments—Hay.	79	The Cansard Line of Figgeries.
37	" "	80	The Advantages of Early Ploughing
38	" "	81	Black Scab in Potatoes.
39	" "	82	Home Preservation of Eggs.
40	" "	83	Marketing of Small Fruits.
41	" "	84	<i>Onion Plant.</i>
42	Permanent Pasture Grasses.	85	Storing Cattle and Pigs on Bacon and Eggs.
43	The Rearing and Management of Cattle.	86	Packing Eggs for Marketing.
44	"Husk" or "Hoos" in Calves	87	Wreeds.
45	Ringworm on Cattle.	88	Tuberculosis in Poultry.
46	Haymaking.	89	Spacings in Poultry.
47	The Black Curran, &c.	90	
48	Foul Brood or Bee Pest.	91	
49	Poultry Fattening.	92	
50	Portable Poultry House.	93	
51	The Leather-Jacket Grub.	94	
52	Flax Growing Experiments.	95	
53	The Construction of a Cowhouse	96	
		97	
		98	
		99	
		100	
		101	
		102	
		103	
		104	
		105	
		106	
		107	
		108	
		109	
		110	
		111	
		112	
		113	
		114	
		115	
		116	
		117	
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		119	
		120	
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		122	
		123	
		124	
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		189	
		190	
		191	
		192	
		193	
		194	
		195	
		196	
		197	
		198	
		199	
		200	

Copies of the above leaflets may be obtained on application to the Secretary, Department of Agriculture and Technical Instruction for Ireland, Upper Merrion Street, Dublin. Applications should be addressed to the Secretary, and envelopes should be marked "Leaflets".



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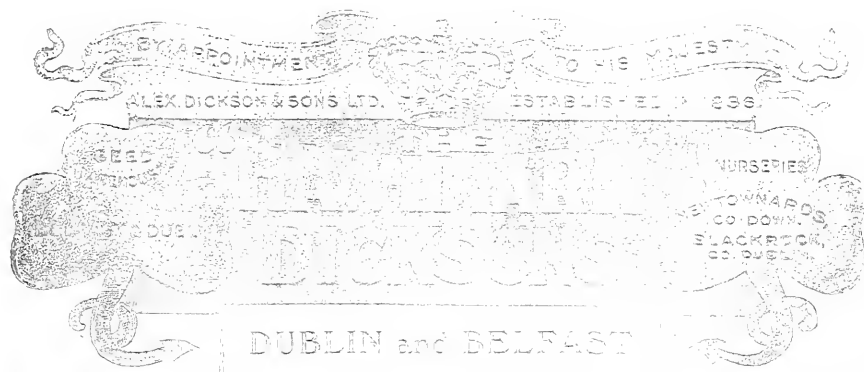
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1919

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OPINIONS OF THE PRESS

DAILY MAIL, July 1919, 1919 National Sweet Pea Show:

"No one ever anywhere has had his eyes, and indeed nose, quite so overwhelmed as when he stood in front of Alex. Dickson & Sons' exhibit of 100 bunches of Sweet Peas, a good number quite new in character as well as in name. The Sweet Pea of the year. Most of all previous years to boot, is 'Hawlmarm Pink.' Five blooms to a stalk are common, and I found one stalk with seven."

GARDENING ILLUSTRATED, July 12th, 1919 (National Sweet Pea Society's Show).

"The wealth of Sweet Peas shown, however, came from the trade, at the head of which we place MESSRS. ALEX. DICKSON & SONS, LTD., who showed their 'Hawlmarm' Strain in prime condition, gaining the only large Gold Medal awarded on the occasion. Outstanding varieties even in this highly meritorious exhibit were 'Hawlmarm Pink' which one might be excused saying must have reached the topmost rung in the pink ladder, so very fine is it. Indeed it is UNIQUE, almost epoch-making."

THE GARDEN, May 21st, 1919 (New and Rare Plants at Chelsea Show).

"Sweet Pea 'Hawlmarm Pink.' We think this one of the finest Sweet Peas we have seen. It is both large and handsome and beautifully coloured. The standards are of clear salmon pink, the wings almost rose pink. It is lovely in the extreme. Sweet Pea 'Brocade.' The dominating colour is rose, the standard of a paler hue on the under sides. Both were shown by Messrs. Alex. Dickson & Sons, Ltd., and both received Awards of Merit."

"Messrs. Alex. Dickson & Sons, Ltd., have three of their 'Hawlmarm' novelties admirably grown and convincingly staged. Dozens of vases of each are on view, so that no sorting out is needed, and growing plants in boxes which afford a good idea of habit and flowering. The varieties are Brocade, Hawlmarm Pink (shades of salmon and deep pink), and Daisybud (a lovely thing in flesh and apple-blossom tints throughout). Our readers have got their choice, though we plump for No. 2: it is really superb. Gold Medal."

Prices—Hawimarm Pink, 12 seeds, 1/6; Brocade, 12 seeds, 1/-; Daisy Bud, 12 seeds, 1/-

For full description and further press and other opinions ask for special leaflet

ALEX. DICKSON & SONS, Limited
Seedmerchants and Nurserymen
HAWLMARK, 61 DAWSON STREET, DUBLIN

Catalogues.

Messrs. E. O. Benson, of Deane Street, Dublin have issued a list of the most useful Bulbs and Flower Roots. We note that the most popular kinds are again in flower, but the Gladiolus, which have been almost entirely neglected in the past, are now

Trials at Wisley, 1919.

LYMA: 13-PBERRIES

THE following notes have been made to Summer Raspberries by the staff of the Royal Horticultural Society's Library:—

Turdus.—*T. Merula*, No. 20, Golden Hornet, sent by Mr. G. Thompson, 12, Park Lane.
Sturnella.—*S. vulgaris*, Nos. 9 and 10, Hornet, sent by Messrs. Paul, Chevalant, and Mr. Consens, Nos. 16 and 17, Pyne's Royal.
Catharus.—*C. auratus*, No. 2, Brown's Extension.
Pipilo.—*P. fuscus*, No. 2, Brown's Extension.
Corvus.—*C. corax*, No. 2, Brown's Extension.
Alcedo.—*A. excubitorides*, No. 2, Brown's Extension.
Colaptes.—*C. auratus*, No. 2, Brown's Extension.
Geothlypis.—*G. trichas*, No. 2, Brown's Extension.
Empidonax.—*E. hammondi*, No. 2, Brown's Extension.
Protonotaria.—*P. elegans*, No. 2, Brown's Extension.
Mniotilta.—*M. varia*, No. 2, Brown's Extension.
Agelaius.—*A. phoeniceus*, No. 2, Brown's Extension.
Spizella.—*S. monticola*, No. 2, Brown's Extension.
Passer.—*P. domesticus*, No. 2, Brown's Extension.
Fringilla.—*F. monticola*, No. 2, Brown's Extension.
Coccothraustes.—*C. vespertina*, No. 2, Brown's Extension.
Parus.—*P. major*, No. 2, Brown's Extension.
Merula.—*M. migratoria*, No. 2, Brown's Extension.
Lanius.—*L. ludovicianus*, No. 2, Brown's Extension.
Bubo.—*B. virginianus*, No. 2, Brown's Extension.
Nyctalex.—*N. noctua*, No. 2, Brown's Extension.
Otus.—*O. asio*, No. 2, Brown's Extension.
Strix.—*S. nebulosa*, No. 2, Brown's Extension.
Scops.—*S. asio*, No. 2, Brown's Extension.
Bubo.—*B. virginianus*, No. 2, Brown's Extension.
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Otus.—*O. asio*, No. 2, Brown's Extension.
Strix.—*S. nebulosa*, No. 2, Brown's Extension.
Scops.—*S. asio*, No. 2, Brown's Extension.


INDEX

First Class, No. 274, Perennial Moss, Curled, said to be the same as *Second Class*, No. 275, Moss, Curled, said to be

Mosses. No. 35, Perfoliate Moss, Curled,
sent by Messrs. B., No. 36, Intermediate Moss, Curled, sent
by Messrs. C., July 6, added.—No. 5.
Fern leaved, Acrostichum, sent by Messrs. Watkin-
sons & Shanks &c., No. 7. Fern leaved, sent by Messrs.
Barr.

THE following has been made to Dwarf Beans, and is given by the Royal Horticultural Society, 1891, p. 125, Wis.—

Arctostaphylos—24, *Tricardalis*, sent by Messrs. Carter & Barr; 25, 27, *Mastopicea*, sent by Messrs. Robinson, Deane & Robinson; Simpson, Sydenham, Sutton, Watkins & Simpson; 45, *Resodactylus*, sent by Messrs. Carter; 46, 47, *Rollulus*, sent by Messrs. Sutton & Barr; 48, *Fill-buster*, sent by Messrs. Barr; Nos. 45, 46, 47, and 48 are not considered as identical & distinct from *Mastopicea*; 49, *Delectious*, sent by Messrs. Watkins & Simpson; 50, 51, *Perpeamus*, sent by Messrs. Barr & Carter; (the Committee regard Nos. 41, 43, and 44 as identical); 56, *The Song*, sent by Messrs. Barr; 65, 66, 252, 8, *Inductive*, sent by Messrs. Sutton, Barr and Nutting; 70, 71, *Mappa*, sent by Messrs. Carter and Barr; 72, *Metis*, sent by R. H. S., Wisley; 76, *Black Prince*, sent by Messrs. Barr; (the Committee regard Nos. 68, 69, 70, 71, 75, 76, 252 as identical); 76, *Proclitus*, sent by Messrs. Carter; 74, *Fedham* *Proclitus*, sent by Messrs. Watkins & Simpson; (the Committee regard Nos. 74 and 75 as identical); 88, *White Heron*, sent by Messrs. Sutton; 89, *White Heron*, sent by Messrs. Watkins & Simpson; 96, *Quail's Egg*, sent by Mr. Dunkin; (the Committee regard Nos. 88, 89, and 96 as identical); 125, *Evergreen*, sent by Messrs. Sutton; 143, 251, *Earth of Air*, sent by Messrs. Watkins & Simpson and Nutting; 155, *Fifty Days*, sent by Messrs. Carter; 146, *Early Mowbray*, sent by Messrs. Morse; 175, *Swallowtail*, sent by Messrs. Sutton; 176, *Early Wren*, sent by Messrs. Carter; 186, *Improved White Wren*, sent by Messrs. Carter. *Highly Commended*—55, *Beautiful*, sent by Messrs. Webb; 56, *The Song*, sent by Messrs. Dickson, Brown & Tate; 57, *Highland*, sent by St. Jean, André, sent by



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VEGETABLES have been rather scarce during the month, and are obtaining still more so. Peas and Beans are showing the results of the dry weather, and, in fact, so are all vegetables, more especially Cabbages and Lettuce. The quality of the latter is so poor that there is little demand for it. Cabbages are becoming scarce and dear, as might be expected, and if the dry weather continues it may reach an unusually high price. The supply of Onions is good, and prices less than half the figure they reached this time last year.

Home-grown Apples are becoming plentiful, and are in good condition—a quality sending high above the poorly-grown class. Pears are being offered in Black and White—mostly Doyenne—and the price is not so high as to discourage their cultivation. Peaches are not supplied, but their price has gone up, and will probably last year's figure. Grapes are poor in quality, and the price may have dropped a little in price.

Flowers are somewhat scarce. The principal varieties in this section are Carnations, Astors, Gypsophylla, and Sweet Williams.

Ferns.—Maidenhair and Nerve and Aralia are eagerly bought up. Ferns may also be included in this section as a first commodity.

The following is a price list for the month:—

		From	To
	Vegetables.	s. d.	s. d.
Cabbages	per doz.	4 0	9 0
Chilliflowers	per doz.	2 0	1 0
Onions (white)	per doz.	2 0	2 1
Onions (green)	per doz.	0 0	1 2
Scallions	per doz.	0 6	0 10

	VEGETABLES—Con.	From	To
	s. d.	s. d.	
Turnips	per bunch	0 6	1 1
Beet	per doz.	0 4	0 6
Lettuce	per tray	0 4	0 10
Broad Beans	per float	1 0	1 9
French Beans	per tray	1 6	2 0
Carrots	per doz. bunches	1 6	2 0
Parsnips	per doz. bunches	1 4	1 10
Parsley	per float	0 7	0 10
Sage	per bunch	0 8	1 0

	Fruit.	From	To
	s. d.	s. d.	
Apples—Cookings	per tray	2 0	7 0
Apples—Select			
Beauty of Bath	per half bushel	10 0	15 0
Apples—Irish			
Peach	per half bushel	8 0	10 0
Peaches	per doz.	3 0	6 0
Tomatoes	per doz.	0 10	1 1
Cucumbers	per doz.	2 6	6 0
Plums	per float	10 0	17 0

	Flowers.	From	To
	s. d.	s. d.	
Carnations	per bunch	0 9	1 0
Astors	per doz. bunches	1 6	2 0
Geranium	per bunch	0 2	0 3
Sweet Peas	per doz. bunches	3 0	4 0
Maidenhair fern			
per doz.		4 0	5 0
Maidenhair fern			
per doz.		16 0	20 0
Mayjars (in 5-b)			
per doz.		15 0	18 0
Aralia (in 5-b)			
per doz.		12 0	15 0

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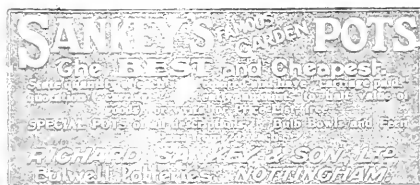
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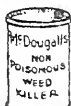
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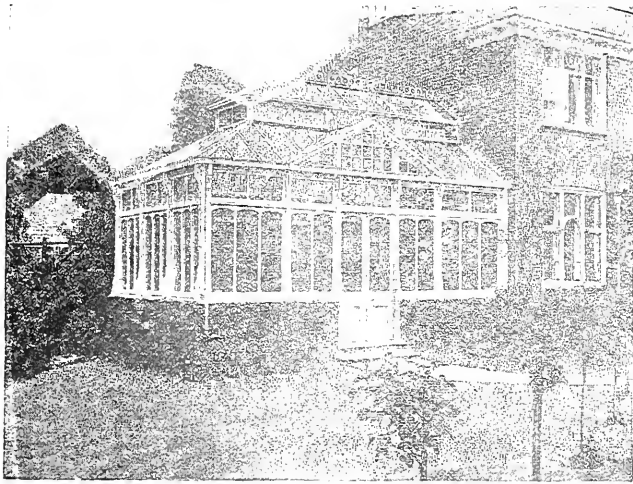
LIST OF THE DEPARTMENT'S LEAFLETS.

No.	Name	No.	Name
1	The Warble Fly	54	Calf Meats.
2	The Use and Purchase of Feeding Stuffs	55	The Apple.
3	Footrot in Sheep.	56	Cultivation of the Root Crop
4	The Sale of Flax.	57	Marketing of Fruit.
5	Celery Leaf-Spot Disease or Blight	58	Sprouting Seed Potatoes.
6	Charlock (or Preshaugh) Spraying	59	Testing of Farm Seeds.
7	Fluke in Sheep.	60	<i>Out of Print.</i>
8	Timothy Meadows.	61	Field Experiments—Wheat.
9	The Turnip Fly.	62	The Management of Dairy Cows.
10	Wireworms.	63	"Redwater" or "Blood Murrain" in Cattle.
11	Prevention of White Scour in Calves.	64	Varieties of Fruit suitable for cultivation in Ireland.
12	Liquid Manure.	65	Forestry: The Planting of Waste Lands.
13	Contagious Abortion in Cattle.	66	Forestry: The Proper Method of Planting Forest Trees.
14	Prevention of Potato Blight.	67	Forestry: Trees for Poles and Timber.
15	Milk Records.	68	Forestry: Trees for Shelter and Ornament.
16	Sheep Scab.	69	The Prevention of Tuberculosis in Cattle.
17	The Use and Purchase of Manures	70	Forestry: Planting, Management, and Preservation of Shelter-Belt and Hedgerow Timber.
18	Swine Fever.	71	Forestry: The Management of Plantations.
19	Early Potato Growing.	72	<i>Out of Print.</i>
20	Calf Rearing.	73	The Planting and Management of Hedges.
21	Diseases of Poultry Gapes	74	Some Common Parasites of the Sheep
22	Basic Slag.	75	Barley Sowing.
23	Dishorning Calves.	76	American Gooseberry Mildew.
24	Care and Treatment of Premium Bulls.	77	Scour and Wasting in Young Cattle
25	Fowl Cholera.	78	Home Buttermaking.
26	Winter Fattening of Cattle.	79	The Cultivation of Small Fruits
27	Breeding and Feeding of Pigs.	80	Catch Crops.
28	Blackleg, Black Quarter, or Blue Quarter	81	Potato Culture on Small Farms.
29	Flax Seed.	82	Cultivation of Main Crop Potatoes
30	Poultry Parasites—Fleas, Mites, and Lice.	83	Cultivation of Osiers.
31	Winter Egg Production.	84	Ensilage.
32	Rearing and Fattening of Turkeys.	85	Some Injurious Orchard Insects
33	Profitable Breeds of Poultry.	86	Dirty Milk.
34	The Revival of Tillage.	87	Barley Threshing.
35	The Liming of Land.	88	The Home Bottling of Fruit.
36	Field Experiments—Barley.	89	The Construction of Piggeries.
37	" " Meadow Hay.	90	The Advantages of Early Ploughing.
38	" " Potatoes.	91	Black Scab in Potatoes.
39	" " Mangolds.	92	Home Preservation of Eggs.
40	" " Oats.	93	Marketing of Wild Fruits.
41	" " Turnips	94	<i>Out of Print.</i>
42	Permanent Pasture Grasses.	95	Store Cattle or Butter, Bacon and Eggs.
43	The Rearing and Management of Chickens	96	Packing Eggs for Hatching.
44	"Husk" or "Hoose" in Calves.	97	Weeds.
45	Ringworm on Cattle.	98	Tuberculosis in Poultry.
46	Haymaking.	99	Seaweed as Manure.
47	The Black Currant Mite		
48	Foul Brood or Bee Pest.		
49	Poultry Fattening.		
50	Portable Poultry Houses.		
51	The Leather-Jacket Grib.		
52	Flax Growing Experiments.		
53	The Construction of a Cowhouse		

SPECIAL LEAFLETS.

1	Catch Crops—Spring Feeding for Stock.	15	Purchase of Basic Slag.
2	Autumn Sown Cereals.	16	Prices of Superphosphate.
3	Eggs and Poultry.	17	" " Compound Fertilisers.
4	<i>Out of Print.</i>	18	Treatment of Allotments for Growing of Vegetables.
5	Sowing of Spring Wheat and Oats.	19	Home Curing of Bacon
6	Winter Manuring—Grass Lands.	20	Prevention of Pollution of Rivers by Flax Farmers and Income Tax. [Water.
7	<i>Out of Print.</i>	21	Pig Keeping
8	Destruction of Farm Pests.	22	Palm Nut Cake and Meal.
9	<i>Out of Print.</i>	23	The Conversion of Grass Lands into Tillage.
10	Pig Feeding—Need for Economy. [omy	24	Threshing and Storing of Grain.
11	Poultry Feeding—The Need for Econ-		
12	Digging and Storing Potatoes.		
13	Sulphate of Ammonia.		
14	Compulsory Sowing of Flax Seed.		

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Correspondence.

TO THE EDITOR IRISH GARDENING.

SIR,—I have read with very great interest the valuable paper on the foliage of shrubs and trees in your last issue by my friend, Sir John Ross. I feel sure that he will forgive me if I call attention to the fact that he has been betrayed certainly into one, and almost certainly into two, errors. He treats *Berberis Bealii* as a synonym of *B. japonica*, whereas, if not a separate species as it used to be regarded, it is at any rate a striking variety which can easily be distinguished by the delicious lily of the valley like perfume of its lemon-coloured flower racemes, whereas those of the type are without smell.

Further, I can hardly doubt that when he talks of the metallic lustre of the leaves of *Shepherdia argentea* he is really referring to *Elaeagnus argentea*, which most nurserymen unfortunately sell under the former name.

The true *Shepherdia argentea* is a hardy Canadian shrub with smallish glaucous leaves, and lacks the metallic lustre so conspicuous in the other. It is very rare in European cultivation. There is a large plant here at Aldenham, and doubtless one at Kew, but I know of no others in England. No one should confuse the two genera, for all the *Elaeagnus*, as far as I know, have alternate leaves, and both the *Shepherdias*—viz., *canadensis* and *argentea*—have them opposite.

Yours truly,

VICARY GIBBS.

Lilium testaceum.

TO THE EDITOR IRISH GARDENING.

SIR,—Mr. Preston's praise of the Nankin Lily (page 138) is no more than this beautiful flower deserves. It is to be regretted that the specific name "testaceum" has been adopted instead of "isabellinum," for "testaceum" means "brick-coloured," which is a gross libel on the delicate hue of the blossom. On the other hand, "isabellinum" has an interesting historical origin. It is the Latinised form of the French "isabelle," dove-coloured—i.e., the colour of a Barbary dove, a term coined by French milliners of the seventeenth century in honour of Isabel, daughter of Philip II. of Spain, and wife of the Archduke Albert. In 1601 the said Archduke laid siege to Ostend, and Isabel vowed that she would not change her chemise till the city was taken. The siege lasted three years and ten weeks, and when the Archduchess at length took off her chemise it was found to be of a colour resembling the corolla of the Nankin Lily!

HERBERT MAXWELL.

Monreith.

Pruning Trees.

"ONLOOKER" misses the point regarding the pruning of trees as advocated in my former note. The necessity for branch thinning is not, as he suggests, the result of previous pruning, but of the want of it. Most trees in nature grow gregariously, that is, they form woods and forests. In this manner the lower branches automatically disappear, the trunks grow straight and clean from being drawn up to the light above, and the heads are comparatively small for want of room to develop. Specimen trees, however, growing more or less isolated, continue to extend all their branches,

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tin 1 6/-; 1lb. 2 9/-; 2lb. 2 6/- per lb. Cwt. lots at 1/10 per lb. We also supply Grassproof paper

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Beltring, 57 Paddock Wood, Kent

and may develop into very noble specimens. On the other hand, an isolated tree is exposed to every gale that blows, and disasters are frequent in the laying low of many cherished specimens, and at the least, immense limbs may be torn off and irreparable damage done.

Thinning out the branches of young specimens as they develop follows, to some extent, what would happen in the forest, and also provides a passage for the wind which would otherwise blow down the tree or seriously injure it. Old and large specimens which have suffered in this way can often be saved and improved by cutting back broken limbs to the main trunk and incidentally thinning out and lightening other branches to restore the balance. "Onlooker," doubtless, has in mind frequent examples of bad pruning seen in the suburbs of large cities, where big trees have to be indiscriminately lopped back because, as a rule, a spreading tree like the London Plane has been planted where Wheatley Elms would have been more suitable.

A good tree pruner will thin out and reduce the branches of a large tree without altering the shape.

ABROR.

Road Transport.

This is a matter of vital importance to farmers and market gardeners. The recent strike on British

railways has demonstrated the complete feasibility of developing a very large system of motor transport, and the fact has not been lost on *The Motor Legislation Committee*, a body formed for the purpose of urging the Government, through the Ministry of Transport, to formulate a complete scheme of motor transport. The committee urges that "For a successful road transport service the following conditions are essential:—

1. Wide and well-constructed roads, efficiently maintained.

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Let those who know how to make good roads, and those who know how to build the right vehicles to run on such roads, together with those who understand the difficulties and technicalities of road traffic, advise the Government in developing a National Roads Policy."

Catalogues.

MESSRS. WM. POWER & CO., Waterford, have issued their autumn list of bulbs and plants, and their many clients will be able to make suitable selections for the ornamentation of their gardens in spring and for permanent planting. Messrs. Power are well prepared for a boom in forestry, and offer most of the best trees for sylviiculture by the thousand. Gardeners and estate owners will do well to study this list.

MESSRS. WM. WATSON & SONS, LTD., whose head office is now at KILLINEY, have issued their catalogues of Fruit Trees and Roses, and both contain excellent selections of the best varieties. With a large nursery at Killiney, fully exposed, Messrs. Watson are in a position to offer hardily grown specimens which lift well and are sure to succeed when transferred to more favourable conditions.

SIR JAMES W. MACKY, LTD., of Sackville Street, Dublin, have favoured us with a copy of their new bulb catalogue, and their numerous customers will have no reason to lament a want of variety in the contents.

While stocks of many things are not yet, of course, back to pre-war size, yet there is abundance in all the leading lines to furnish a brilliant spring display.

Printed on high-class paper, the numerous illustrations are specially good; in fact, we have rarely seen a better-produced catalogue.

Royal College of Science.

SCHOLARSHIP EXAMINATIONS—RESULTS.

As a result of the recent examination the following candidates have been awarded Scholarships at the Royal College of Science:—D. J. Bradley, 30 Cyprus Avenue, Bloomfield, Belfast; A. G. G. Hill, Eden Villa, Mount Merrion Avenue, Blackrock, Co. Dublin; P. F. Oakley, Catherine Street, Linavady, Co. Derry; Thomas Tynan, Ballycuddihy, Kilmagh, Co. Kilkenny (Scholarships in Agriculture); C. E. Bowman, Walton, Osborne Drive, Bangor, Co. Down (Scholarship in Horticulture). Four of the successful candidates were trained at the Albert Agricultural College, Glasnevin, Dublin.

The Scholarships entitle the holders to free instruction at the Royal College of Science, free board and residence at the Albert Agricultural College, and a third-class fare for one journey, to and from their homes, in each session.

Provided satisfactory progress is made, the Scholarships are tenable during the four year course for the Associateship of the College, in the Faculty of Agriculture.

The Journal of the Department of Agriculture and Technical Instruction for Ireland.

THE current issue of this valuable quarterly publication is chiefly of interest to agriculturists. The Vice-President's address to the Council of Agriculture covers the whole agricultural industry, but contains no reference to horticulture.

At page 466 a useful article on *Marketing Wild Fruits* is given. Much sound advice is contained therein, and the article might be read with profit by all interested in marketing fruit, whether wild or cultivated.

Information regarding scholarships in Agriculture, Horticulture, Forestry, and Creamery Management commences at page 477, thereafter following Syllabuses of the Examination with a list of the books prescribed. Further information is given regarding courses of instruction in Fruit Growing and General Gardening, Farm Apprenticeships and Forestry Instruction.

We have also received the *Report on the Trade in Imports and Exports of Irish Ports during the year ended 31st December, 1917*. Price, 9d.; the price of the Journal being 6d.; both obtainable through booksellers.



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BY USING

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Our Vine, Plant and Vegetable Manure, also Special Top-dressing Manure are ever increasing in public favour—they embody the practical experience of many years in all branches of Horticulture, producing vigorous, healthy and fruitful growth. Write for our booklet containing useful hints on Gardening Matters.

VINE, PLANT AND VEGETABLE MANURE.—112 lbs., 20/-; 56 lbs., 16/-; 28 lbs., 8/-; 14 lbs., 5/-; 7 lbs., 2/-; Time 2/6 and 1/2. Carriage paid on 16 lbs. and up, anywhere in United Kingdom.
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Webb & Sons, Stourbridge.

READERS OF IRISH GARDENING will need no introduction to this well-known firm, the produce of whose seeds are to be seen in so many gardens and on so many farms. At the last Horse Show of the Royal Dublin Society the firm was represented by a very attractive exhibit of seeds mostly agricultural, but an interesting addition was seen in the many examples of very fine vegetables raised from Webb's seeds and a remarkably fine lot of Sweet Peas.

The samples of Wheats, Oats, Barley, Grasses and Clover must have pleased agriculturists, and the presence of Mr. W. Rourke, Messrs. Webb's Irish representative, was a guarantee that the utmost attention would be given to every enquiry.

Calor Clogs

For Garden and Field

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CALOR Clogs are much cheaper than boots and just as comfortable and warm. They keep your feet dry during Winter work out of doors. Uppers of good grain leather, lined with non-tearing felt and nicely finished. Plain strong wood soles. For men or women. Price 8/11 Post Free.

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Exceeds all others in General Fertilising Properties and Staying Powers
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IMPROVED METAL CONES

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To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 10d. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 1/3 each.

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This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

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The Journal of the Board of Agriculture (England.)

THE Journal of the Board of Agriculture (England) contains interesting articles on *The Lincoln Tractor Trials*, *Land Reclamation in Germany*, *Manufacture of Farina from Potatoes*, and other matter particularly affecting the agricultural industry.

Dublin Wholesale Markets.

THE markets were well stocked during the month. Cabbages were well supplied, and the amount offered is being increased by the early crop of Savoy; still this seems to have little effect on the value of York. Onions are not in such demand as they were this time last year, and are only fetching about half the price. Carrots and Lettuce have been selling well, and are steadily increasing in value. Parsley and Beet have been too cheap to be worth growing for market. Anyone who has Peas or French Beans to sell now is in luck. Both of these vegetables have sold well during the season—especially the latter—and their prices have gone up in leaps and bounds. Cauliflowers are also going high at the present time. Vegetable Marrows have been cheap during the season, but lately they have reached in or about five times their former prices.

In the Fruit section prices have become rather disappointing. Apples have fallen to pre-war prices; still, there are no foreign Apples to be seen. Plums are not selling so well now as early in the month. Grapes have been cheap for a considerable

time back; the only fruit promising to be dear now is the Pear.

There is very little doing in the flower section. The following are the principal cut flowers just now: Sweet Peas, Roses, Asters and Stocks.


The following is a price list for the month:—

		From		To
		s.	d.	s. d.
VEGETABLES.				
Cabbages (York)	per load	-	30 0	60 0
Cabbages (Savoy)	per load	-	10 0	25 0
Turnips	per bunch	-	0 3	0 4
Carrots	per doz. bunches	1	6	2 2
Lettuce	per tray (equal 1 doz.)	0	8	1 2
Parsley	per tray	-	0 6	0 8
Beet	per doz.	-	0 6	—
Cauliflowers	per doz.	-	4 0	6 0
Peas	per float	-	8 0	9 0
French Beans	per tray	-	3 0	5 0
Onions	per float	-	2 6	3 0
V. Marrows	per doz.	10	0	14 0
FRUIT.				
Apples (1st grade)	per bushel	-	5 0	8 0
Apples (2nd grade)	per barrel	-	15 0	20 0
Apples (extra select)	per tray (2½ doz.)	3	0	3 6
Grapes (Black)	per lb.	-	1 2	1 10
Grapes (Muskats)	per lb.	-	1 0	1 10
Cucumbers	per doz.	-	4 6	7 0
Melons	each	-	3 0	6 0
Tomatoes	per lb.	-	0 8	1 0
FLOWERS.				
Asters	per doz. bunches	2	0	2 6
Stocks	per bunch	-	0 4	0 6
Roses	per bunch	-	0 4	0 8
Sweet Peas	per doz. bunches	4	0	4 6

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1 gallon to 60 gallons water

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Miscellaneous Section.

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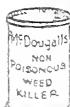


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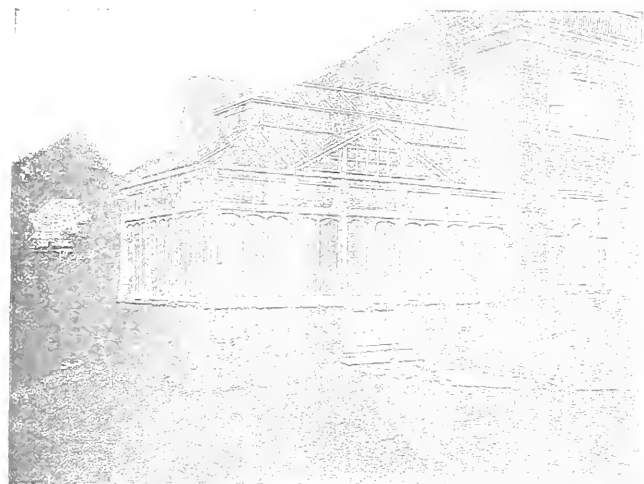
LIST OF THE DEPARTMENT'S LEAFLETS

No.	Name	No.	Name
1	On the Purchase of Feeding Stalls	54	Calf Meals.
2	On the Purchase of Feeding Stalls	55	The Apple.
3	On the Purchase of Feeding Stalls	56	Cultivation of the Root Crop
4	On the Purchase of Feeding Stalls	57	Marketing of Fruit.
5	On the Purchase of Feeding Stalls	58	Sprouting Seed Potatoes.
6	On the Purchase of Feeding Stalls	59	Testing of Farm Seeds.
7	On the Purchase of Feeding Stalls	60	<i>Out of Print.</i>
8	On the Purchase of Feeding Stalls	61	Field Experiments—Wheat.
9	On the Purchase of Feeding Stalls	62	The Management of Dairy Cows.
10	On the Purchase of Feeding Stalls	63	"Redwater" or "Blood Murrain" in Cattle.
11	On the Purchase of Feeding Stalls	64	Varieties of Fruit suitable for cultivation in Ireland.
12	On the Purchase of Feeding Stalls	65	Forestry: The Planting of Waste Lands
13	On the Purchase of Feeding Stalls	66	Forestry: The Proper Method of Planting Forest Trees.
14	On the Purchase of Feeding Stalls	67	Forestry: Trees for Poles and Timber.
15	On the Purchase of Feeding Stalls	68	Forestry: Trees for Shelter and Ornament.
16	On the Purchase of Feeding Stalls	69	The Prevention of Tuberculosis in Cattle.
17	On the Purchase of Feeding Stalls	70	Forestry: Planting, Management, and Preservation of Shelter-Belt and Hedgerow Timber.
18	On the Purchase of Feeding Stalls	71	Forestry: The Management of Plantations.
19	On the Purchase of Feeding Stalls	72	<i>Out of Print.</i>
20	On the Purchase of Feeding Stalls	73	The Planting and Management of Hedges.
21	On the Purchase of Feeding Stalls	74	Some Common Parasites of the Sheep
22	On the Purchase of Feeding Stalls	75	Barley Sowing.
23	On the Purchase of Feeding Stalls	76	American Gooseberry Mildew.
24	On the Purchase of Feeding Stalls	77	Scum and Wasting in Young Cattle
25	On the Purchase of Feeding Stalls	78	Home Buttermaking.
26	On the Purchase of Feeding Stalls	79	The Cultivation of Small Fruits
27	On the Purchase of Feeding Stalls	80	Catch Crops.
28	On the Purchase of Feeding Stalls	81	Potato Culture on Small Farms.
29	On the Purchase of Feeding Stalls	82	Cultivation of Main Crop Potatoes
30	On the Purchase of Feeding Stalls	83	Cultivation of Oats.
31	On the Purchase of Feeding Stalls	84	Ensilage.
32	On the Purchase of Feeding Stalls	85	Some Injurious Orchard Insects.
33	On the Purchase of Feeding Stalls	86	Dairy Milk.
34	On the Purchase of Feeding Stalls	87	Barley Threshing.
35	On the Purchase of Feeding Stalls	88	The Home Bottling of Fruit.
36	On the Purchase of Feeding Stalls	89	The Construction of Piggeries.
37	On the Purchase of Feeding Stalls	90	The Advantages of Early Ploughing.
38	On the Purchase of Feeding Stalls	91	Black Scab in Potatoes.
39	On the Purchase of Feeding Stalls	92	Home Preservation of Eggs.
40	On the Purchase of Feeding Stalls	93	Marketing of Wild Fruits.
41	On the Purchase of Feeding Stalls	94	<i>Out of Print.</i>
42	On the Purchase of Feeding Stalls	95	Store Cattle or Butter, Bacon and Eggs.
43	On the Purchase of Feeding Stalls	96	Packing Eggs for Hatching.
44	On the Purchase of Feeding Stalls	97	Weeds.
45	On the Purchase of Feeding Stalls	98	Tuberculosis in Poultry.
46	On the Purchase of Feeding Stalls	99	Seaweed as Manure.
47	On the Purchase of Feeding Stalls		
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SPECIAL LEAFLETS.

1	On the Purchase of Feeding Stalls	15	Purchase of Basic Slag.
2	On the Purchase of Feeding Stalls	16	Prices of Superphosphate
3	On the Purchase of Feeding Stalls	17	Compound Fertilisers.
4	On the Purchase of Feeding Stalls	18	Treatment of Allotments for Growing of Vegetables.
5	On the Purchase of Feeding Stalls	19	Home Curing of Bacon
6	On the Purchase of Feeding Stalls	20	Prevention of Pollution of Rivers by Flax
7	On the Purchase of Feeding Stalls	21	Flax and Income Tax. [Water.
8	On the Purchase of Feeding Stalls	22	Pig Keeping
9	On the Purchase of Feeding Stalls	23	Bolton Nut Cake and Meal.
10	On the Purchase of Feeding Stalls	24	The Conversion of Grass Lands into
11	On the Purchase of Feeding Stalls	25	Flax.
12	On the Purchase of Feeding Stalls		
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Varieties of Fruit Suitable for Cultivation in Ireland.

THE following list of varieties of fruits has been prepared for the guidance of farmers and cottagers, and in bringing it under their notice the Department take the opportunity of once again urging upon every person who owns land the desirability of devoting portion of the land to fruit growing. The extensive enquiries which the Department have made during the last few years have shown that fruit, particularly apples, of excellent quality can be grown in Ireland. The value of fruit as an article of diet is not sufficiently recognised for home consumption, any kind of fruit which will suit the soil and situation should be grown.

Regarding the cultivation of fruit for sale, the apple can be recommended with the greatest confidence, provided the management is good and that care is taken in grading and packing the fruit for market. A leaflet (No. 55) dealing with the cultivation of apples has been issued by the Department, and copies can be obtained, free of charge, on application.

Those who intend to plant should prepare their land and order trees early, as owing to the great demand, arising chiefly from the Department's scheme of instruction in horticulture, it will be difficult to get first class trees late in the season.

Farmers are warned against purchasing trees which are badly formed or otherwise defective; they should insist upon having the best. In the counties where instructors in horticulture have been appointed by County Committees of Agriculture and Technical Instruction it is competent for the County Committee to purchase trees in bulk and resell them at cost price to farmers.

The notes printed below refer to the numerous varieties of fruits that can be grown in Ireland. No kind has been included that does not possess some special merit. All the varieties mentioned are not, however, suited for general use; those specially recommended are marked thus.

DESSERT APPLES.

1. **ELIXATION PERIN.**—A popular variety; fruit of moderate flavour; it is a healthy grower on either Paradise or grassy soil, and makes a beautiful pyramid-shaped tree.

Season.—November to January.

2. **AMERICAN MOTHER.**—An excellent variety; attractive in appearance and of fair quality; a good cropper and hardy.

Season.—October.

3. **Bounty of BATH.**—The best early dessert variety, and one of the best market kinds; flesh firm, colour bright and attractive; quality excellent.

Season.—August.

Bentley's Concentrated Alkali

A quick-acting non-poisonous winter wash for fruit trees and forest trees of every kind.

One tin makes from 22 to 32 gallons of wash.

1 to 5 tins	3/4 each
6 "	3/2 "
12 "	3/1 "
20 "	2/10 "
40 "	2/8 "

Carriage paid on 7/6 orders and upwards.

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14 ABOL 17 WEED KILLER

Most effective for Weeds on Paths, Drives, &c.

POWDER: Tin to make 50 Gallons, 5/6.

"STICTITE" BANDING COMPOUND

for Fruit Trees

Why not try it? You will be well repaid.

1/6 2/3 2/9 3/6 2/5 per Tin. Cost as at 1/10 per Tin.

Kept in every Gardening Shop.

Of Seedsman, Ironmongers, &c. If you have any difficulty, write us.

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Winter Spraying of Fruit Trees.

THE following extracts are from the "Spraying Calendar" given by Professor Pickering, M.A., F.R.S., Director of the Woburn Experimental Fruit Farm, and F. M. Theobald, M.A., Vice-Principal, South-Eastern Agricultural College, Wye, Kent, in their very useful little book, "Fruit Trees and their Enemies." Copies of this book can be had post free for 1s. 9d. each.

"Apart from the consideration of the direct action of a winter wash in destroying various pests which are probably present, moss, lichen and dead bark must always be removed, and the freer trees are kept from this, the healthier they will be, and the less will be the opportunities afforded for insects to do mischief."

"From January to March—Spray trees with a caustic paraffin emulsion for cleansing them of dead bark, and of surface moss, lichen, mussel scale, small apple-eating moth, gooseberry and currant sawfly, gooseberry speller, currant shoot and fruit moth, pear leaf-miner, and possibly other insects."

"Winter spraying is now resorted to by practically every up-to-date fruit grower. The formula most recommended for Winter Spraying Emulsion is as follows:—Soft soapy (but paraffin (solar distillate) 5 parts; kerosene 2 to 2½ lbs.; water, 9½ gallons. The necessary tools for this Spraying Mixture can be had, with directions for mixing, from D. M. Watson, M.P.S., The Orchard & Cautist, 61 South Great George's Street, Dublin (Phone, 1971), who also keeps in stock Chappin's V.I. Winter Wash, Berger's Lime Sulphur Solution, &c., &c."


quadriflorus.—Strong Paradise stock; inclined to embolism; lab stock when planted in cold or light and soil.

Notes.—September.

13. Rivers' Park.—An old variety, which requires a good deal of cultivation; very liable to embolism; not recommended for general planting.

Notes.—November to March.

1. Rivers' Park.—An old variety; fruit of low quality; on both seedling and grafted stocks; and does not keep well.—Notes.—September.
2. Charles Ross.—An old variety, with good fruit; on grafted stocks.—Notes.—September.
3. Rivers' Park.—An old variety; fruit of low quality; on both seedling and grafted stocks; and does not keep well.—Notes.—September.
4. Rivers' Park.—An old variety; fruit of low quality; on both seedling and grafted stocks; and does not keep well.—Notes.—September.
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12. Rivers' Park.—An old variety; fruit of low quality; on both seedling and grafted stocks; and does not keep well.—Notes.—September.



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WM THOMSON & SONS, LTD., CLOZENFORDS, N.B.

14. **RUSSETS.**—These are of various kinds and qualities, are mostly well flavoured, and very hardy; more suitable for private use than for market.

Season.—November to May.

15. **WORCESTER PHARMACIA.**—A very handsome and popular market variety; a great cropper and a healthy growing tree; succeeds well on either crab or Paradise stock, but higher class fruit is produced on the latter.

Season.—September and October.

COOKING APPLES.

16. **ALFRISTON.**—An old and useful late fruit variety; liable to canker in the North of Ireland, but does well on warm soft fruit land.

Season.—December to May.



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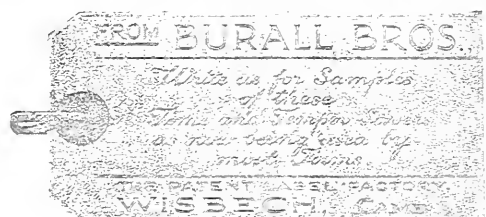
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It can be applied with syringe or pump, or used for dipping.

PRICES Half-pint, 1-; pint, 1/9; quart, 3-; half gallon, 5-; gallon, 8/-; five gallons, 30-; ten gallons, 54-; 1 gallon sufficient for 50 gallons of water.

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Exceeds all others in General Fertilising Properties and Staying Powers
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For Fumigating in Greenhouses.

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No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 10d. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 1 3 each.

No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/9 each.

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This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

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 Soils.—All soils.
 Propagation.—By cuttings.
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 $\mathbf{W}_n = \mathbf{W}_0 + \eta \nabla_{\mathbf{W}_n} \mathcal{L}(\mathbf{W}_n)$

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[Faint, illegible handwritten notes]

294 *Journal of Interpersonal Violence* 26(2)

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